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NEWS SUMMARY

A DECISION will be taken next month by the Federal Government of the Rhodesias and Nyasaland on the alternative proposals to build a hydro-electric scheme on the Kafue or the Zambesi, says our correspondent. p. 935

DETAILS of the Government proposals to make additional resources available for investment in educational building are announced. Control over projects costing less than £10,000 is to be abolished. p. 946

THE PROPOSAL to develop the "New Barbican" area of the City of London has been turned down by the Court of Common Council. p. 947

IMPROVEMENTS in construction methods and structural techniques and in soil mechanics now make it practicable to construct buildings of 10 or 12 storeys on all but the worst ground, Mr. A. W. Skempton has stated. p. 948

A PLEA for the new Town and Country Planning Act to be given a fair trial has been made by Mr. Desmond Heap in a paper to the Town Planning Institute. p. 949

IN THE FIRST TEN MONTHS of 1954, 287,628 permanent houses were completed compared with 255,894 in the same period of 1953. p. 952

REFUSAL by a London firm of building contractors to reinstate 14 men dismissed after a strike at Crawley New Town may lead to an official strike. p. 962

RETENTION MONEY OR BONDS?

THE use of financial bonds, whether related to the performance of the contract or confined to the maintenance period only, is not a satisfactory substitute for retention money—at least so far as main contracts are concerned. Such is the main conclusion of the report of the Working Party set up by the Ministry of Works to investigate the possibility of bonds or guarantees replacing the present system of retentions. The report (which was summarised in our issue of last week) is short, but the arguments against the use of bonds or guarantees as a substitute for retention moneys are put forward clearly and effectively.

The principal form of bond is that which provides for the payment of a specified sum by a bank or insurance company in the event of the non-performance of the contract; that is, the performance bond. It can hardly be regarded as a satisfactory alternative to retention moneys, since a main object of retention money is to provide a fund against a contractor's failure to remedy defects. Many disputes as to responsibility for defects are now settled by good sense and maybe by arbitration, and the retention money provides a reasonable security for the employer. If the bond were regarded as taking the place of the retention money, a third party would be brought into disputes, and the Working Party, not unnaturally, fear that this would lead to an increase in the number of cases going to arbitration.

For the same reason, the Working Party do not consider that the recently introduced "maintenance guarantee" bond is likely to afford a satisfactory alternative. This type of bond, which relates solely to the remedying of defects during the maintenance period, is not entered into until practical completion of the work, and when the cost of making good outstanding known defects has been evaluated. The surety binds himself in a sum which is a proportion of the amount to be retained during the maintenance period and which, on acceptance of the bond, the employer will release to the contractor. The Working Party conceded that this arrangement might be of advantage to the contractor where retentions of the order of ten per cent. are involved, but did not consider that it would offer any appreciable advantage where the retention was smaller as under the Government contract CCC/Wks/1. The advantages of this type of bond do not, in our opinion, outweigh the risk of increased arbitrations resulting from the intervention of a third party.

Also investigated in the report is a form of guarantee under which a company set up by a trade association guarantees the standard of workmanship and materials carried out by a member of the association. The workmanship and materials are guaranteed by the guarantor company during the progress of the work and for a period of 12 months after completion, but the maximum liability is limited to £500. Claims for defective work or materials have to be submitted to the guarantor company which will cause the defects to be rectified. This particular scheme was applicable to a specialist trade, and the Working Party thought that it could not be satisfactorily applied to building or civil engineering operations as a whole; moreover, the NFBTE were definitely opposed to any such system being applied to building as a whole. As to sub-contracts, if these were dealt with on the basis of guarantees and the main contract on the basis of retention money, there would be no advantage to the sub-contractor unless there were special provision for payments to the main contractor to be made in full in respect of sub-contracts.

There will, we think, be general agreement with the Working Party's conclusions, and our only regret is that the report did not go further into the question of the use of bonds and guarantees. This would, perhaps, have been outside the terms of reference since they were concerned with the possibility of bonds being used as a substitute for retention moneys; nevertheless, if retention moneys are to continue—and there seems to be no alternative—then the whole question of bonds and guarantees should be re-examined: the fact that performance bonds are a general custom of the industry is no reason why they should continue. The Working Party rightly points out that in most cases the cost of the bond is a net addition to the cost of the building which in the long run must be paid for by the employer. There is no need to stress the need to avoid unnecessary additions to cost, particularly at the present time. It may, however, be useful to add that, unless they are very carefully drawn up, performance bonds do not really provide adequate protection to the building owner. One of the standard legal text-books on building contracts —Hudson—goes so far as to state that "the form of guarantee offered is often not worth the paper on which it is written." With the ordinary form of bond, any material alteration in the plans, any extension of work or time, or a premature payment of retention money (unless made with the surety's assent) will release the surety. The effect, to quote Hudson again, is that "the employers are, therefore, in the dilemma of having to sacrifice the best interests of the work or lose the benefit of the premium which has been paid." These difficulties can be overcome by a carefully

drawn bond, but this involves the employer in seeing that any bond entered into by the contractor is satisfactory from his point of view. Local authorities and private building owners might well consider whether the disadvantages of bonds do not outweigh their advantages.

Finally, to revert to the report, we would wholeheartedly endorse the Working Party's recommendation that the sum retained should be the minimum required by the circumstances of the case. In this connection, the report draws attention to the fact that CCC/Wks/1 provides for a maximum retention of 5 per cent., but not exceeding £1,500 on jobs under £50,000; thereafter the maximum retention is 3 per cent. This compares very favourably with the maximum of ten per cent. permitted by the RIBA Standard Form, even allowing for the fact that under the RIBA a higher proportion of the reserve is payable on practical completion. The Joint Contracts Tribunal might well consider bringing the Standard Form more into line with Government practice in this respect.

"FIFTY YEARS OF BUILDING EDUCATION"

THOSE who saw the recent exhibition on "Fifty Years of Building Education," put on at the Building Centre as part of the Brixton School of Building Jubilee celebrations, can hardly have failed to be impressed by the story it had to tell. It is always interesting to see a familiar scene through the eyes of another and many building employers may have been surprised at this educationist's view of the last 50 years. The suggestion that, before 1939, the technical colleges were given little chance to show what they could do to assist training for building must cause every builder to cast his mind back to those days when many things in the industry were very different from now. The memories thus recalled of evening studies, of discussions on apprenticeship and, most of all, the hazy recollection of what the colleges did and what they tried to do in pre-war days will cause many an uneasy feeling that this suggestion is not far off the mark. The training and production methods, already widely practised in the factory industries by the mid-nineteen-twenties, seemed to have no possible application to the building industry, but it is not difficult to understand how the more active and far-seeing of those connected with technical education were impatient for the building industry to seek from the colleges the same co-operation they gave to many branches of engineering. Employers in several parts of the country, particularly in Yorkshire and in the North West, will recall the building teachers' associations which sought, by a variety of means, to excite their interest, though probably few will remember giving those activities more than a passing thought.

Towards the end of the stimulating brochure issued on the exhibition, there was a downright statement to the effect that for its necessary technical advance, the building industry needs the help of the technical colleges. It is a mark of the changes that have taken place in the industry since 1939 that few builders will be disposed to dispute this statement, certainly not those anxiously seeking recruits to their technical staffs to cope with current building activity in the London area. It is not so long since the industry complained of changes in official policy which had the effect of turning it on and off like a tap. The technical colleges might, with equal justice, complain that they are often expected to run without being turned on at all.

Certainly, if the industry is to obtain from the technical colleges the flow of technically competent students it needs, it must see that those students are put into the colleges in the first instance and this applies equally to the full-time and sandwich courses and to the part-time courses to which the bulk of young employees go. A long view of the needs of apprenticeship training for the skilled crafts is not unfamiliar, but it would be well for building employers to remember that this does not cover all the requirements of the industry nor the whole of its interests in the technical colleges. The pattern of industrial development to-day is plain to see and one would like to have more evidence that the whole scope of training for the building industry matched this pattern. Then, indeed, the technical colleges would have their chance.

Notes of the Week

DESIGN OF HIGH FLATS

THE design and construction of high blocks of flats of ten storeys or more is a big and immediate problem in Britain. A few have been built, more are planned, and there is a widening acceptance of the view that they have an important rôle to play in meeting the housing needs of the country. Neither their economics nor their social implications, however, are yet fully understood; and few people in these islands have had an opportunity of appraising the visual effects of tall buildings in towns, particularly in housing development centres.

The lack of open spaces in central areas, the congestion of streets, high densities, the high cost of land, the encroachment of building on agricultural land, and—too often—the featureless spread of housing estates beyond the confines of their cities, are compelling a growing number of local authorities to consider the contribution that the building of high flats can make to their housing and reconstruction programmes.

Some discussion of these matters is urgent and the Royal Institute of British Architects has, therefore, arranged to hold a symposium on the whole problem. This will take place on Tuesday, February 15 next, and will last the whole day. The chair will be taken by Dr. J. L.

AWARD FOR BRICK BUILDING.—The Medical Students' Hostel, St. Bartholomew's Hospital, which is the subject of the award given by the Worshipful Company of Tylers and Bricklayers for the building of most merit erected within eight miles of Charing Cross during the three previous years. The decision in favour of the hostel was made by Sir Giles Gilbert Scott, OM, Sir Edward Maufe, RA, and Mr. R. H. Uren, FRIBA, who have awarded a gold medal to the architect, Mr. J. Murray Easton, FRIBA, and a silver medal to Mr. A. Clutterbuck, foreman bricklayer, of Messrs. Humphreys, Ltd., the builders.

Martin, FRIBA, Architect to the London County Council, and a group of authoritative speakers will introduce the discussions on the various aspects of the problem.

The morning session, beginning at 10 a.m., will deal with questions of policy and planning; and the afternoon session lasting until about 6.30 p.m. will be devoted to construction, technology and economics.

It is believed that these discussions will be helpful not only to architects, but to all who are concerned in the reconstruction of cities or in the planning and administration of new towns.

Although the symposium is intended mainly for architects, invitations to attend and to take part in the discussions will be extended to a number of contractors, housing managers, planning officers and others directly concerned in the building of high flats.

A synopsis of the main points to be discussed at the symposium and the names of the speakers taking part will be announced at an early date.

Admission will be limited and by ticket only. A charge of 10s. 6d. per person will be made to cover morning coffee, buffet lunch and tea. Applications for tickets, accompanied by cheques or postal orders for 10s. 6d., should be sent to the Secretary, RIBA, as soon as possible.

SIR HUGH ON PEKIN

SIR HUGH CASSON gave a talk about his visit to Pekin at the Architectural Association last Monday, writes Basil Marriott. It naturally attracted a very large audience, for Sir Hugh is widely recognised as one of our best speakers. Besides diverting us, however, he always has noteworthy, and sometimes profound, things to say. One has on occasions seen slight signs that his audiences may unfortunately do him that disservice common to those who combine philosophy with wit, as Casson certainly does: this is the equivalent of that menace, the BBC "studio audience," whose premature applause tends to anticipate the drop of the penny, and spoils things for those who really want to listen.

The AA, of course, knows better. I may not tell you exactly what Sir Hugh said, however, as a tactful briefing had warned us that he must not be quoted verbatim. But you will guess that Sir Hugh was going great guns—or Chinese crackers—and a good time was being had by all, including me, when I had to leave.

RIBA MEMBERSHIP

THE total membership of the RIBA, according to figures given in the new issue of the Kalendar, 1954-55 (66, Portland-place, W1, price 10s.), is now 22,061, which compares with 21,225 last year, an increase of 836. Here are details of the principal classes of members, last year's figures being given in parentheses: Fellows, 2,054 (2,046), an increase of 8; Associates, 11,671 (10,641), an increase of 1,030; Licentiates, 2,552 (2,597), a decrease of 45. Students number 5,060 (5,217), a decrease of 157, from which it would appear that the great post-war expansion of the profession is past. Retired members of all classes now number 501 (493). Changes in other classes of membership are slight.

THE JOINT FACULTIES BALL

A FRIENDLY, happy atmosphere, which is apt to be lacking in very large gatherings, characterised the annual dinner and ball of the Faculty of Architects and Surveyors and the Faculty of Surveyors of England, which was held at the Park Lane Hotel, W1, on Wednesday last week. The speeches were, in the main, in a lighthearted vein, as fitted the occasion, and the Earl of Verulam, who proposed the toast to the Joint Faculties in what was generally acclaimed as the speech of the evening, carried his listeners far from the worries of the present-day world in his delightful account of the eccentricities of his grandfather in the realm of amateur plumbing.

In his response the president, Mr. James Rushton, as presidents do on these occasions, had to be rather more serious, but Mr. T. G. Matsell, vice-president, restored the earlier mood. Sir Alfred Bossom, MP, FRIBA, who responded, tried to mix a few home truths with a characteristically witty speech, but by this time his audience were turning their thoughts to the dancing, and his warnings on the high cost of building certainly dampened no spirits.

THE AGBI

THOSE who had the pleasure of receiving a copy of the delightful pen-and-ink drawing that "Acanthus" made last year for the Artists' General Benevolent Institution and Artists' Orphan Fund will be interested to see from the annual report of the Institution that it was instrumental in raising over £388. Altogether the stewards, of whom "Acanthus" was one, raised over £4,791. With the season of charity and good will close upon us, many of our readers may be glad to be reminded that the address of the Institution (architects and their dependants are eligible for its benefits) is Burlington House, Piccadilly, London, W1.

COMING EVENTS

MONDAY, DECEMBER 13

RIBA.—Library Group meeting. Mr. D. Stratton Davis, ARIBA will introduce an evening on J. B Papworth. 66, Portland-place, W1. 6 p.m.

TUESDAY, DECEMBER 14

ILLUMINATING ENGINEERING SOCIETY.—"Maintenance of Lighting Installations," by Messrs. J. Mortimer, Hawkins, W. Robinson and J. W. Strange 2, Savoy Hill, WC2. 6 p.m.

THURSDAY, DECEMBER 16

INSTITUTION OF STRUCTURAL ENGINEERS.—"Fabrication and Erection of Steel Plate Girder Railway Bridges," by Mr. M. F. Palmer. 11, Upper Belgrave-street, SW1. 6 p.m.

LONDON MASTER BUILDERS' ASSOCIATION.—Council meeting, to be addressed by Mr. Ian M. Leslie, OBE, on "Looking at Africa." 47, Bedford-square, WC1. 2 p.m.

FRIDAY, DECEMBER 17

ARCHITECTURAL ASSOCIATION.—Students' Carnival. 34, Bedford-square, WC1. 8.30 p.m.

INSTITUTION OF MECHANICAL ENGINEERS.—"Recent Studies of Metallic Friction" by Dr. F. P. Bowden, FRS. 1, Birdcage Walk, Westminster, SW1. 5.30 p.m.

LMBA's No. 3 Area.—Luncheon at which Dr. R. L. James, headmaster of Harrow School, will be guest of honour. Connaught Rooms, Great Queen-street, WC2.

COMPETITION NEWS

Snowdonia National Park

A PRIZE of £50 is offered for the best designed symbol for the Snowdonia National Park.

The symbol should be:

(a) Recognisable at a glance and be readily distinguishable by people passing in trains, motor-cars or buses;

(b) capable of use either on its own or in conjunction with milestones, direction boards, etc., and easily recognisable when reduced to medallion size as, for example, on a badge or armlet;

(c) capable of being used in black and white or in colours; and

(d) capable of reproduction at a reasonable cost, if possible by local craftsmen.

If the competitor wishes, the words Parc Cenedlaethol Eryri and Snowdonia National Park, or the appropriate initials, may be included in the symbol, but if wording is inserted, it shall be either in Welsh only or in both English and Welsh.

The competition will be judged by a panel of judges appointed by the Snowdonia Park Joint Advisory Committee, who will have the right to withhold the prize in the event of no entry being considered worthy of the award. Copyright of the prize-winning design will be vested in the Joint Advisory Committee of the Snowdonia National Park.

Entries, under a nom-de-plume, and accompanied by the competitor's name and address in a sealed envelope, should be submitted to the Clerk to the Joint Advisory Committee, County Offices, Penarlag, Dolgelley, Merioneth, by January 31 next.

COMPETITIONS OPEN

OFFICES AT ALDWYCH, LONDON.—Site: Old Gaiety Theatre, Aldwych, WC2. Promoted by English Electric Co., Ltd. Adjudicators: Sir Percy Thomas, P-PRIBA; Mr. John Murray Easton, FRIBA. Competitors: Mr. David du R. Aberdeen; Messrs. Adams Holden and Pearson; Sir John Burnet, Tait and Partners; Messrs. Farmer and Dark; Messrs. Farquharson and McMorran; Mr. Michael Rosenauer; Mr. Louis de Soissons: Mr. Basil Spence, and Messrs. Yorke, Rosenberg and Mardall. Closing date: Early 1955. *August 20, 1954.*

ANKARA DEVELOPMENT PLAN.—International competition for improvement of existing development plan of Ankara, capital of Turkey, and proposals for future needs. (Competitors must visit Ankara for 15 days' research.) Prizes: £T30.000, £T24,000, £T15,000, and five prizes of £T5,000. Promoted by Directorate of Development, Government of Turkey. Assessors: Professor Sir Patrick Abercrombie, MA, FRIBA, and Turkish Government officials. Conditions from the Turkish Embassy, 43, Belgrave-square, SW1. Deposit: Equivalent to 100 Turkish liras (lira worth about 2s.). Closing date: March 10, 1955. *September 17, 1954.*

NATIONAL EISTEDDFOD GOLD MEDAL FOR ARCHITECTURE.—To architect of post-war building or group of buildings which has made real contribution to the architecture of the Principality. Promoted by Royal National Eisteddfod, Pwllheli. Adjudicators: Mr. Lewis John, MA, FRIBA; Dr. T. Alwyn Lloyd, FRIBA, P-PTPI. Closing date: May 1, 1955. *August 27, 1954.*

NATIONAL EISTEDDFOD PRIZES IN ARCHITECTURE.—(1) Health Centre for Pwllheli (Prize £50); (2) Redevelopment of any Caernarvonshire village (£30); (3) (for Juniors) Library for Pwllheli (£20). Not proposed that projects be carried out. Conditions from General Secretary, Eisteddfod Office, Pwllheli. Adjudicators as for Gold Medal Award. *August 27, 1954.*

** The date in italics refers to the issue of The Builder in which fuller details were published.*

PROFESSIONAL ANNOUNCEMENT

MR. ROBERT J. COLE, LRIBA, has removed as from December 6 to 10, King's-ride, Camberley, Surrey (tel.: Camberley 2383).

An African Newsletter

Lusaka, N. Rhodesia, November 25.

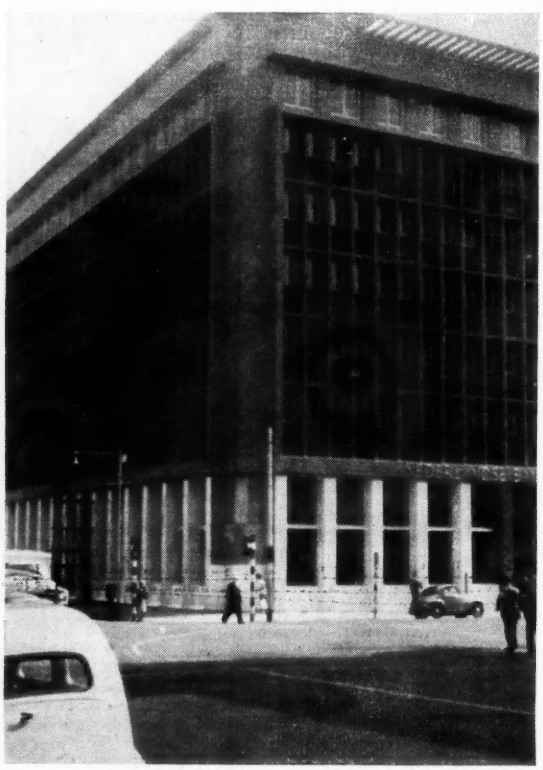
SOUTHERN RHODESIA, which I have just left, fills one with hope for the future of South Africa. Here, one feels, an honest attempt is being made to work out a way of life in which European and African will have such share as their development may entitle them to win. Materially there is much to be done. Problems connected with the African's health, nutrition and housing—to say nothing of education in the technical field—abound throughout the Territory, especially in Salisbury and Bulawayo, but the will to take the practical steps towards working out the solutions is undoubtedly there and is only hampered by shortness of money.

Bulawayo, indeed, has suffered something of a building relapse since the ending of the Rhodes Centenary Exhibition last year. One gains the impression that the focal point of the territory is moving northwards as Salisbury continues to expand, and Bulawayo needs a fillip such as a decision to make it the territorial capital of Southern Rhodesia would give. The argument at present raging over this matter outweighs the subject of the progress of the Federation. But many people who believe in Federation in spirit as well as in name are beginning to ask what point there is in maintaining, in addition to the Federal Government, individual government for Southern and Northern Rhodesia and Nyasaland, the three partners in the Federation. A further prolonged term of office of the present UK Government might well speed up the day when the Central African Federation constitution is revised. That, at any rate, is the view of some long-headed Rhodesians.

BUILDING DOLDRUMS

In the meantime Bulawayo, and to a lesser extent Gwelo, 100 miles away to the north, are in the building doldrums. Not that there is not a good deal of construction going on in each town; it is the future that is causing concern. What seems to be needed in both these splendidly laid-out towns (with their wide streets decreed by Rhodes to be capable of permitting a wagon and ox span to turn) is a greater influx of industry, heavy as well as light, for which their proximity to the Wankie coal fields, convenience to the Union and a labour force capable of expansion would seem to fit them. Gwelo, indeed, is in a particularly favourable position as it will shortly be joined by a new railway line from the Portuguese port of Lourenço Marques, thus relieving the pressure on Beira and speeding up the delivery of goods, at present being necessarily phased by the Beira port authority.

The quality of architecture in both towns is interesting, and here one sees the truth of Thornton White's remark made in Cape Town that often a true contemporary architecture is more perceptible in the smaller communities where the offices are either being set up by men who have recently left the schools or managed by them as branches of older-established firms from the bigger centres. Much of the work in Bulawayo is being designed by Ian MacGillivray, son of a father who has one of the oldest-established practices in Rhodesia, and by Ayers, Wilson and Parker, who also have an office in Gwelo. It is one of the curious things about Africa that in spite of having such vast expanses of land, sites in urban areas are expensive, for which the high cost of roads and services is largely responsible. The point block of six, eight or even more storeys is therefore beginning to be seen in these towns. There is less building work about than the contractors would like, so I was told by Mr. A. G. Plumb, the genial secretary of the Master Builders' Association, who kindly showed me the town, and this view was endorsed by Mr. R. W. Downing, manager of Gilbert-Ash (Rhodesia), Ltd., one of the British firms which have made a considerable name for themselves in the territory. But one must feel that, in a country as progressive as this, the recession is only temporary.



PRETORIA.—The new Netherlands Bank, Pretoria. Norman Eaton, architect.

At Gwelo, a town of 6,000 Europeans placed at almost the exact centre of the Rhodesias, I met Mr. John Mercer, a young graduate of the Cape Town School of Architecture, who is enthusiastic about Gwelo's future, and whose enthusiasm has been rewarded by a quickly growing practice. Since Mercer, by starting work at 6 a.m. and getting in three hours before breakfast, makes certain that administrative cares connected with an architect's practice shall not keep him from the drawing board, he deserves his success. Apart from the branch of Ayers, Wilson and Parker already mentioned, the only other architect in the town is V. L. Jenkinson, also trained at the Cape. Most firms of architects in the Rhodesias find difficulty in getting experienced assistants, though pay is good. A common complaint is that some of the men who have come over from the United Kingdom are inexperienced in practical things and, moreover, take life too easily. There is no doubt that throughout British Africa are great opportunities for young architects with the right training and outlook.

THE FEDERAL CAPITAL

And so on to Salisbury as the sole passenger in a DH Beaver which skims the bundu, or bush country, at a few hundred feet. The present airport at Salisbury, conveniently near the centre of the town, is to be replaced by a field at Kentucky capable of handling the Comet service. The town itself strikes a pleasant note with its wide streets and tree-lined avenues. Here as in other Rhodesian towns the avenues run east and west and the streets (numbered First, Second *et seq.*) north and south, making it simple to find the way about. Here is the seat of the Federal Government and also, pending a final decision, the home of the Territorial Government. The official buildings have a pleasant domestic flavour about them and this is equally true of the Government members themselves whom I met, notably Sir Godfrey Huggins, the Federal Premier, and Sir Roy Welensky, the Vice-Premier and member for Broken Hill in the Copperbelt. Rhodesia has thrown up statesmen rather than politicians, in the main, and in this lies the main cause for belief in the future of the new Federation.

It would be idle to pretend that Federation has the unqualified support of all Rhodesians, particularly those in the North. The development over the past 20 years of the coppermining areas north of Lusaka has brought enormous sums into the Northern Rhodesian coffers, and these are now being deployed to the joint benefit of the three territorial partners. The North, perhaps not unnaturally, feels that it is carrying the Federation; the South, while appreciating a recent and substantial fall in the rate of income tax and the cost of whisky, considers itself to be the cultural and intellectual leader. As one Salisbury resident describes it: "We married the North for money; they married us for a good name." Nyasaland at present stands in the equivocal position of the poor relation, yet with its fertile lands it

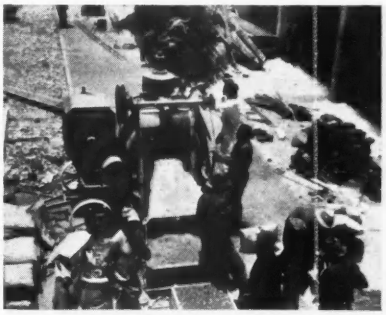
may well play an important part in the future economy of the country.

HYDRO-ELECTRIC SCHEMES

As I write, discussion is raging over the proposal to build hydro-electric power stations at Kafue or Kariba on the Kafue and Zambesi rivers respectively. Either would be a gigantic operation, and would result in great developments in a country where the lack of adequate power and fuel is keenly felt. Kafue could be built quicker and cheaper (£30m.) than Kariba (estimated to cost £100m.), and many feel that this is the answer, particularly as the cost of power from the Kariba scheme might well be too high initially. What does seem important is that a decision be quickly taken as all the factors are now established. The Government's decision will be made known in January.

What surprises one in the Rhodesias is the rate of development. There is a considerable building programme—Government offices, post offices, commercial buildings, flats and houses as well as civil engineering works in the form of roads, bridges and dams. In all this work British firms are prominent, particularly Costain, Sir Robert McAlpine, Howard, Laing and Roberts, Gilbert-Ash and Miles. Some of their early ventures have had teething troubles, mostly connected with labour, but they are now winning a high reputation. The cost of building appears to be roughly comparable with prices in Great Britain, or only slightly higher so far as commercial work is concerned. But the cost of housing as reflected in rents is much dearer, and is causing the Government anxiety, so Sir Godfrey Huggins told me, as it is an important factor in restricting immigration of people of the artisan class. It is hardly possible in Salisbury, for instance, to buy any kind of house for less than £4,000, and the idea is widely current that the profit margin is altogether too high. There is probably something in this—the housebuilding industry did extremely well out of the immigration rush of 1948 onwards—but there are other reasons, principally connected with the high cost of roads and services reflected in site charges. Reductions should undoubtedly be made here: the Rhodesian habit of siting individual houses on stands (plots to us) of anything from one to three or four acres is not conducive either to cutting costs or to the happiness of artisans who have been accustomed to living at 12 or 16 to the acre and being able to talk to Bill Brown across the garden fence. This is beginning to be realised and one or two firms, notably Costains at Mabelreign, are putting up architect-designed houses at four to the acre, thus cutting down on service charges. Another venture, planned by a Salisbury engineer, Mr. D. H. L. Keeble, with a Salisbury architect, Mr. F. S. Halford, aims to build small houses at prices ranging from £1,175 for a one-bedroom house to £2,734 for a four-bedroom house, each inclusive of native servants' quarters. Such a scheme is certain of a good reception.

Salisbury also is building high and a new block of 16-storey flats, Trafalgar Court, is the tallest building in Rhodesia. Its architect, Callum Ross-Mackenzie, with his partners van Heerden and Hartford, has one of the largest practices in the city, and has broken ground in the use of colour, particularly suitable to the warm Rhodesian sunlight. Salisbury has about 26 firms of architects of whom d'Arcy Cathcart and Son, and Pallett and Price are perhaps the senior. The profession is widely used by industry, and some good examples of factory work



GWELO.—An African concreting gang at work in Gwelo, Southern Rhodesia.

are to be seen. Materials generally are readily obtainable, though good quality timber is hard to get and sanitary-ware is also in short supply, partly due to the dock strike whose crippling effect has been felt throughout British Africa. Cement periodically is short, but high cost would prevent imports from helping out. British goods have a ready sale in the Rhodesias, so Mr. H. W. Woodroffe, Assistant Trade Commissioner in Salisbury, tells me. They sell on merit and quality. Union goods are competitive on price, however, and with the forthcoming relaxation of import control expected next year, the time may be right for the Federation to ease control also. There are still opportunities for new goods, of which windows on the multiple louvre system may be one, but market surveys are essential and stockholding vital. Several architects have told me that they are tired of specifying interesting new UK goods only to find that delivery cannot be made in time.

AFRICAN HOUSING

The Rhodesias have two main problems (apart, that is, from attracting new capital to the country) on their hands: African housing and welfare, and European-African labour relations. These two are linked in some measure because the real problem of the African is less racial relations than poverty which holds him back from advancement; and this in turn is related to his opportunities to get increased wages through industrial advancement. In everything one writes about the African it is important to remember that, in the mass, he is at present of poor mental stature and lacks energy and application. It is significant that, although he may show technical progress in, say, bricklaying for two or more years, six months back in his kraal means that he must be trained all over again and from the very beginning. This is one of the factors which is making industry realise that the system of engaging the African "boy" and of making no housing provision for his wife and family who are left in the village while he completes his two or three years of service is wrong.

Southern Rhodesian policy was outlined to me by Mr. G. Ellman Brown, who is the territorial Minister responsible for African housing. The Government aims at the establishment of a body of industrialised Africans, stable and with a sense of responsibility, and believes that the provision of a home where they can live with their families is a first step. As an experiment, a four-roomed house of about 500 sq. ft. is being designed which, with interest at five per cent. and a redemption period of 15 years, can be let at £3 2s. 6d. per month. The owner-tenant will be granted a 33-year lease. Houses in first instance will be allocated on a points system in which continuity of employment will be an important factor. The Government hopes to spend £14 millions on a four-year plan of housing. As the rentals are beyond what most Africans can pay, it is proposed, says Mr. Ellman Brown, to permit a controlled experiment by which two of the four rooms may be sublet to single men who will each pay £1 monthly, thereby reducing the rent to a net 22s. 6d.

Another experiment which it is proposed to try out is to allocate plots, put in services (£70 on average) and foundations (£30) and supply materials and supervision to a total of £200, leaving the building work to be done by the African himself.

PROGRAMME OF 4,000 HOUSES

The immediate programme envisaged is that services shall be put in for 4,000 houses throughout the Territory, though mostly in Bulawayo and Salisbury, and that 3,000 be built in the next year. The Minister is well aware that this is inadequate in view of the shortfall of 10,000 married houses and 19,000 single quarters but he points out that finance is the limiting factor; of the Southern Rhodesian budget of £12m., one-third, it appears, goes on Native housing, education and welfare. In these schemes schools will be provided and sites left for other welfare buildings.

African housing in general, apart from the experimental schemes referred to, remains the primary responsibility of the employers who must either provide the employee with a house or pay the municipality £1 monthly towards the cost of housing him. In time, no doubt, the responsibility for paying its contribution to African housing will be placed squarely on the municipality, rather than being divided between municipality and employer, but public opinion is not yet ready for this, it would seem. Industry is doing much for its African employees, especially the big mining interests in the Copperbelt. In all this work the Rhodesian building industry can and is helping, by organising the work and providing supervision, but the key to the solution of the problem on an economic basis undoubtedly lies in training Africans to play an effective part in building their own houses, and here the need is for more European supervisors who will demonstrate to the African how work should be done and not only, as it has been put to me, "stand around with hands in pockets shouting instructions."

I. M. L.

CORRESPONDENCE

APPOINTMENT OF PRIVATE ARCHITECTS: POLICY OF KENT CC

To the Editor of *The Builder*

SIR,—In your issue of November 26 you publish extracts from a report of Mr. Ashley Smith, the Kent County Architect, which to people who have spent their lives engaged in finance must appear somewhat intriguing.

Many of the public know only too well that mathematics (and particularly estimates) are often not strong points in an architect's make-up, and this report seems to afford yet another instance of this.

The County Architect asserts that by employing fewer private architects and more staff architects he can save *up to* £4,750 per annum. It should be noted that the cost of the salaries of the new staff are given *as approximate*, and that the saving is qualified by the words *up to*, which is all most significant in that they offer a way out if the estimated savings do not materialise.

Further, to save the ratepayers about £4,750, the County Architect admits that he has to spend over £30,000 in buildings and equipment and then added to all this, we are told, there are such extras as adjustments of existing staff salaries to fit the new régime, annual salary increases, etc., to say nothing of more car allowances and interest on capital invested in buildings.

In short, Sir, there is no doubt whatsoever that the changes thus proposed will show very little, if any, saving at all and that the county will at the same time be landed with a batch of 26 new staff architects costing about £1,000 per annum each who will expect to be classed as " permanent " graded officials.

Bearing in mind the pending change of focus of public spending to roads and later to hospitals, it may well be that not many years ahead this staff and its new buildings may become redundant (in spite of the wishful thinking of Education Authorities) and in this case I feel sure that our County Council could again not be able to afford to retain the services of this new and expensive staff and would very regretfully have to dismiss them. This state of affairs cannot possibly apply when an Authority employs a panel of private architects.

With instances in finance and administration such as the above, the combined Chambers of Trade of the County of Kent have felt it their duty to demand an inquiry and report by a firm of expert consultants into the administration and spending of public money.

In conclusion, Sir, may I point out that if such an inquiry does take place it may have far-reaching effects on the organisation and work of the County Buildings Department.

C. S. F. WITTS
(Deputy Mayor, Margate).

30, Omer-avenue, Margate, Kent.

OUTLOOK FOR PRIVATE PRACTICE

To the Editor of *The Builder*

SIR,—It is risky to prophesy, particularly about what is likely to be happening fifty years hence, but following up the implied invitation of your correspondent " Seneschal," I would suggest that the intervening years are likely to witness a great increase in official architecture. And by official architecture I do not mean only the work of public and semi-public authorities. The tendency in industry and commerce is towards bigger and bigger organisations, and where these involve a large amount of building work it may be found an economy to set up architectural departments, as has been done by the big banks, the railways, the multiple stores and other concerns.

" Can anyone spell 'inadequate'?"

Is it to be assumed, therefore, that the field of activity for the private architect is likely to shrink? Quantitatively, perhaps not, for we can almost certainly count on a steadily expanding economy, involving a great variety and volume of building work that is bound to come the way of the private architect—business premises, shops, offices, factories, houses and flats, churches, halls, and other buildings of social purpose, to say nothing of the great amount of maintenance and repair work needing the skilled services of the architect. In addition, there is always likely to be a field of activity for the specialist in the design of such work as airports, hospitals, science buildings, etc.

Although official work is almost certain to increase, it is not likely to do so to the point of becoming uneconomic. It is well known that the principals of architectural departments of public authorities have on occasion found it better to distribute work among private architects than to build up their staffs to what, when pressure relaxes, may have to be an uneconomic level.

Apart, however, from his value as a sort of expansion joint in the architectural machine, the private architect is a social asset that deserves to be perpetuated. The drawback of departmentalism is that it encourages a routine attitude to design, to which the freshness of the independent mind is a healthy corrective. From this point of view alone it might be found good policy by all bodies or concerns possessing their own architectural departments to entrust a certain proportion of their work to private firms.

On the whole, therefore, I would say that the outlook for private practice is by no means discouraging.

OPTIMIST.

PROFESSIONAL QUALIFICATIONS

To the Editor of *The Builder*

SIR,—Are not men in small authority, employed by central and local government, going a little too far in their patronage towards professional institutions in these days of ever-growing subservience to such institutions?

In my local paper I read that the services of an engineer are required by Basildon Development Corporation who *must* be AMICE, or a member of the Institution of Municipal Engineers. The advertisement goes on to state that " A university degree in engineering would be an advantage."

Since when, may one ask, has the examination of either of the bodies referred to been rated higher than a university engineering degree, and who has decided that it should be so?

The same may be said of the London County Council, who advertise for architects whom they state *must* be ARIBA. What is wrong with a degree in architecture? And what a pity it is that the people who are primarily responsible for the education of new entries to the professions have allowed themselves to be supplanted.

I very much doubt the legality of the advertisements I have mentioned.

A. N. HOOKWAY.

Thundersley, Essex.

OBITUARY

Hugh Armytage-Moore

THE death is reported from Belfast of Mr. Hugh Armytage-Moore, who was responsible for the layout of the grounds at Parliament Buildings, Stormont, Belfast, and the grounds at Belfast City Hall. He was 82.

BERKSHIRE SOCIETY OF ARCHITECTS

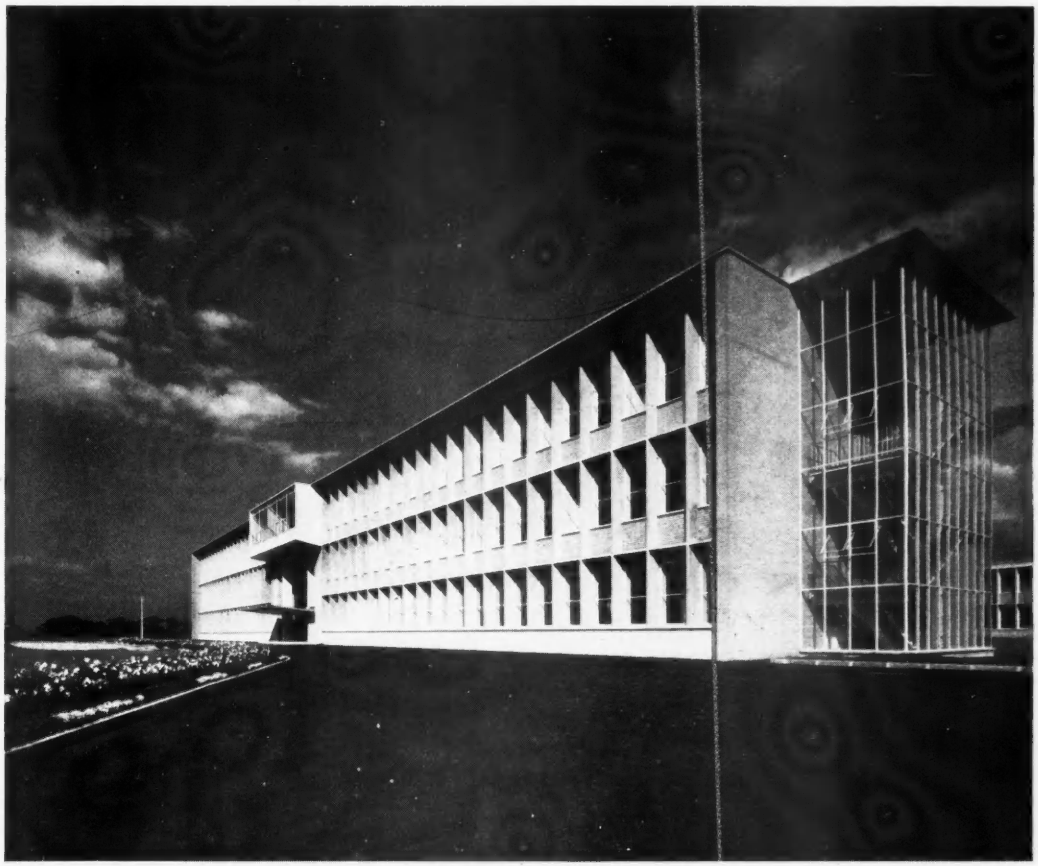
Members' Work Exhibited

THE BERKSHIRE SOCIETY OF ARCHITECTS has arranged, in association with Mr. W. A. Smallcombe, Director of the Reading Museum and Art Gallery, an exhibition of post-war work of its members. It opened on December 4 and will remain open until December 18.

The membership of the society is made up not only of architects in private practice, but also of those engaged in public service. The exhibition indicates by means of drawings, photographs, and models, the versatility of local architects in the variety of jobs they undertake. Examples include:—

Council estates, public offices, drill hall, shops, restaurants, flats, canteens, memorials, factories, laboratory buildings, old people's homes, fire stations, Sunday school hall, library, swimming bath.

Endeavouring still further to interest the general public in the work of local architects, the Society held on December 8 a lecture on " New Materials and Techniques for Building," by Mr. Gontran Goulden, ARIBA.



The front office wing.

OFFICE BUILDING AT WYTHENSHAWE, MANCHESTER

Architects
CRUICKSHANK & SEWARD, FRIBA

Builders
J. GERRARD & SONS, LTD.

THESE offices for Renold Chains, Ltd., are sited at the junction of the Styal and Ringway Roads, which connect Manchester's principal airport to the centre of the city. The building forms the terminal feature of Ringway-road, and is planned symmetrically about its axis. It is set in extensive gardens, which have been partly completed during the period of building. All the rooms overlook lawns, and fine views of the Derbyshire hills are obtained from many of the offices.

The plan is in the form of an "H," the two parallel wings containing general and private offices, and the centre wing principally containing accommodation such as filing and records rooms, stores, cloakrooms, and lavatories. A suite of rooms for directors' meetings is contained in the cantilevered structure above the main entrance. The front and centre wings are three-storeyed; although the rear wing has only two floors, it is designed for the addition of a further storey at a later date.

An important requirement in planning was flexibility of internal layout. For this purpose, each wing has an uninterrupted level ceiling, to allow the sectional partitions to be rearranged in any desired layout. Telephone and electrical services are brought to the desk positions by concealed floor channels.

The layout of the office desks determined the structural grid. The vertical reinforced concrete fins are spaced at 6 ft. centres, their cross sectional area being 3 ft. 3 in. by 5 in. The latter width was found to be the minimum practicable dimension for efficient jointing and was also considered to produce a suitable proportion architecturally.

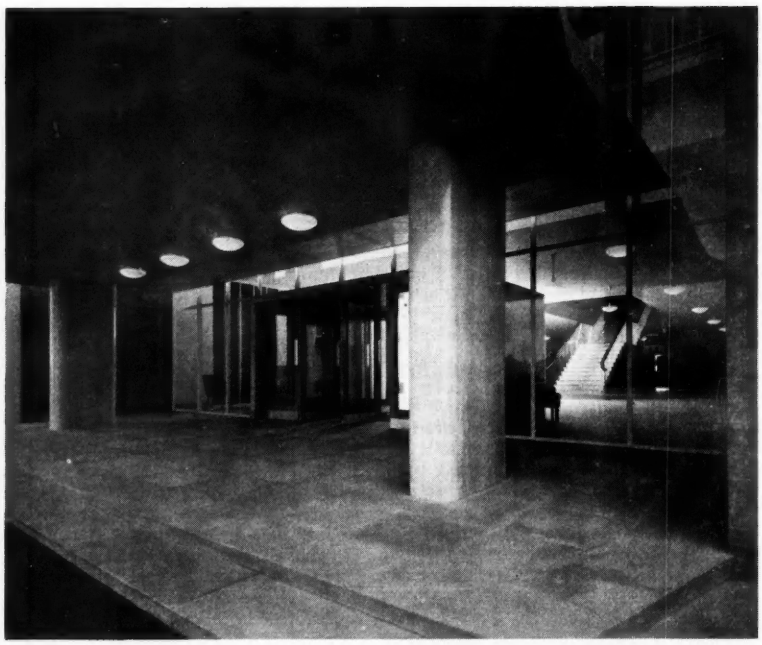
All the framing, floors, roofs, and staircases, etc., are of *in-situ* reinforced concrete, the construction being freely expressed in the elevations. The two office wings have façades of the honeycomb type, in which structural vertical and horizontal fins contain deeply recessed window panels. The treatment was chosen, aesthetically speaking, for its bold texture and strongly rhythmic effect; structurally, it possesses a high resistance to wind pressure and eliminates the transfer of large moments to the flooring system.

A contrasting architectural expression was given to

The rear office wing from north-east. Below : The main entrance.

the centre wing. Here, the principal façades consist of glass block walls standing in front of the structural framework. Each wall is 120 ft. long by 36 ft. high, and to obtain pattern and scale, is sub-divided by mullions and transomes of precast reinforced concrete ; the latter, with frame opening windows, are attached to the edges of the cantilever floor slabs. The centre wing is separated from the front and rear wings by fully glazed towers, which light the principal staircases.

Generally, external walls are built of golden-brown hand-made bricks, contrasting in colour and texture with the exposed concrete members. The small recessed panels under the office windows have



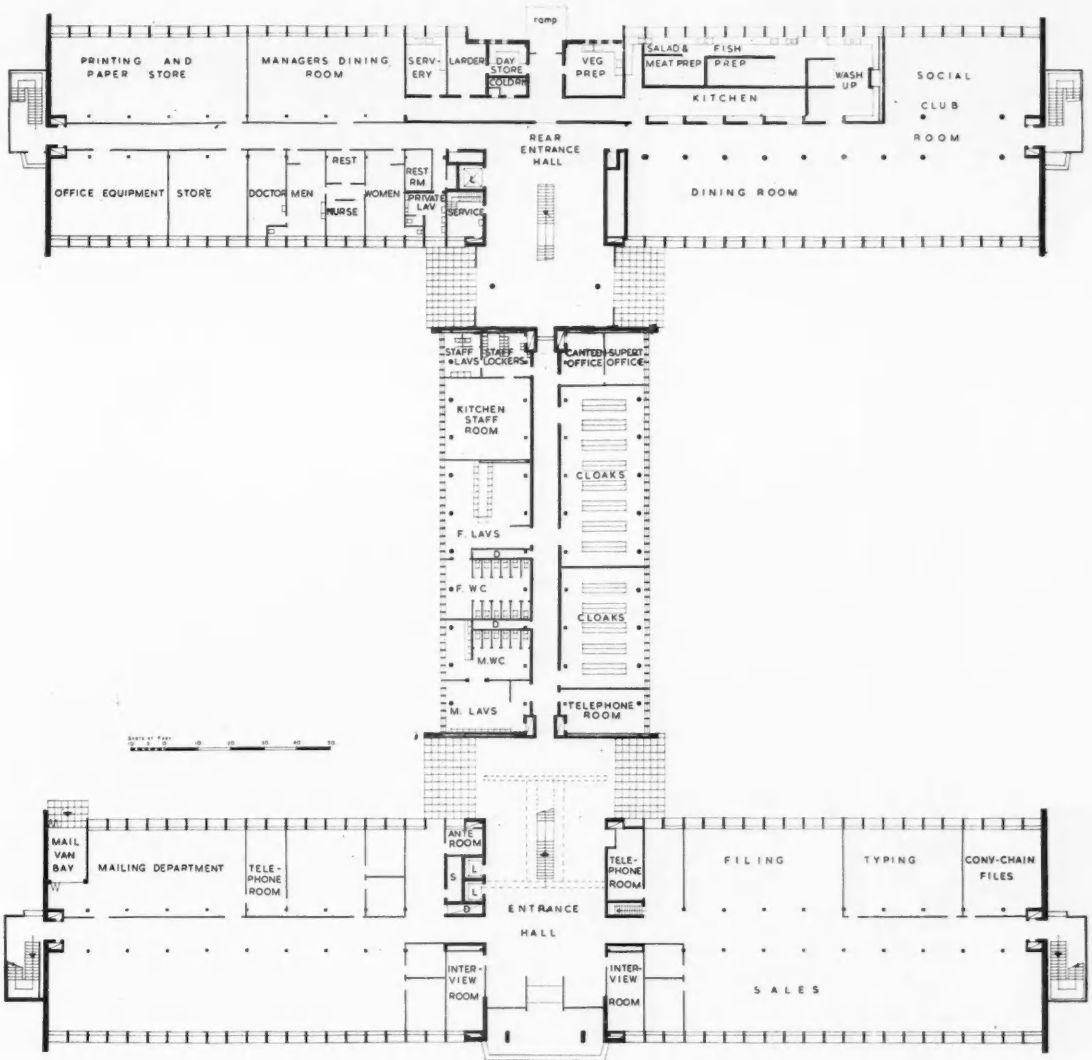
continuous perpends, emphasised by raking. Brickwork is used internally in the secondary stair towers, the staircases being bracketed from the end framing of the wings and riding clear of the walls to reveal the full sweep of the brickwork through the glass.

The projecting structure above the main entrance, which houses the board room suite, is lined externally with cream travertine. This material is also used to face the two external supporting columns and the "box" which contains the entrance doors. Elsewhere, the external reinforced concrete has a natural, rubbed-down finish, with some colour treatment at focal points. In the rear wing, two large areas of concrete walling provide a field for decorative treatment. An overall, recessed pattern has been formed on their face, by attaching shaped panels to the sheeting, and this pattern is emphasised by colour.

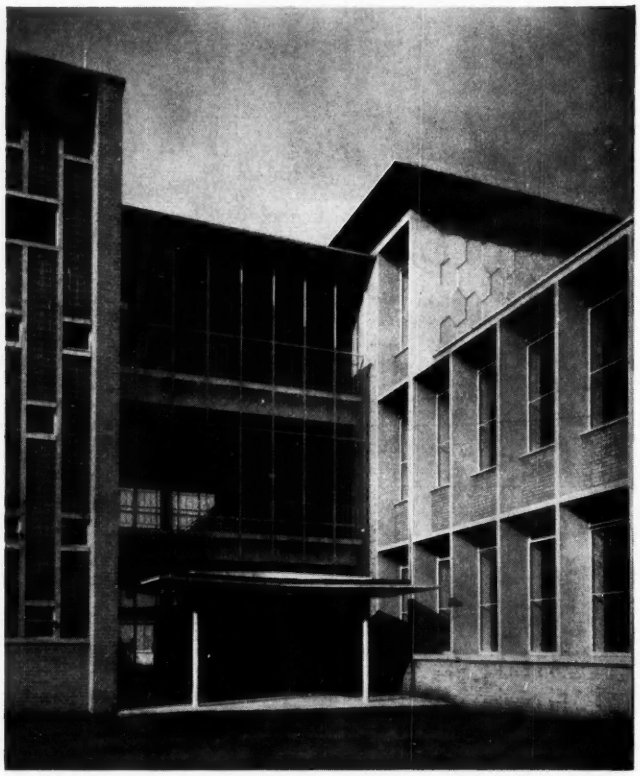
Clear, bold colours are used widely in the building to provide a bright and buoyant atmosphere, and, in a more restricted sense, to define structure. The roof structure of each rear secondary stair tower, for example, which consists of a cantilevered folded slab, has its planes defined by contrasting colours.

Terrazzo is used for the floors and staircases of the main halls and landings, thermoplastic tiles are used for secondary halls, and coloured asphalt is employed in the canteen. Office floors consist of linoleum on a ½-in. asphalt underlay. Rooms in the board suite are close carpeted, and the approach corridor in this area has a cork tile finish.

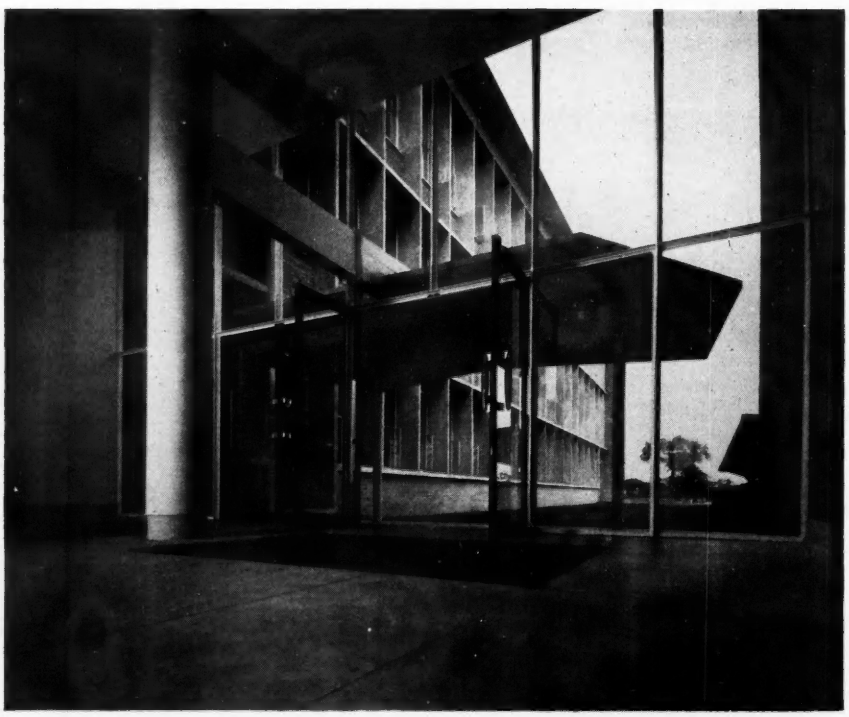
Heating is by electrode boiler plant, and thermal storage vessels charged at "off peak" periods; low-pressure hot water is circulated through thermostatically controlled convectors, recessed beneath the windows. Electrical, and other services, are distributed by vertical ducts, which connect the subway to each floor level. Local distribution is via floor channels



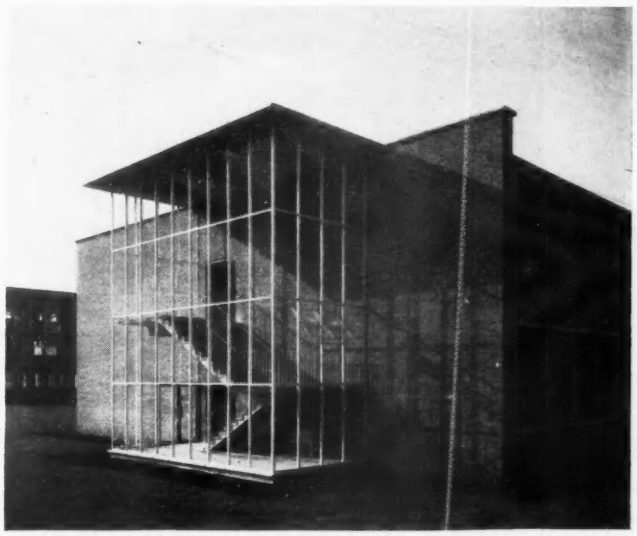
Ground-floor plan.



Detail of rear stair hall.



Detail of secondary entrance canopy.



Detail of stair tower attached to rear wing.

with removable covers. Internal plumbing is also concealed in accessible ducts. Following is a list of sub-contractors and suppliers:

Sub-contractors: Reinforced concrete frame, roof, floors, Trussed Concrete Steel Co., Ltd.; heating installation, Dodd Engineering Co., Ltd., Manchester, 15; electrical installation, W. J. Furse and Co., Ltd., Manchester, 2; metal windows and doors, Doodson and Bain, Ltd., Manchester, 11; wall tiling and terrazzo, Conways (Tiles and Terrazzo), Ltd., Manchester, 13; glass block walling, J. A. King and Co., Ltd.; internal partitions, Holoplast, Ltd., Larkfield, Kent; passenger lifts, Waygood Otis, Ltd., Manchester, 3; goods lift, J. and E. Hall, Ltd.

Architectural metalwork, Duxbury, Hartley and Co., Ltd., Salford, 3; travertine linings, J. and H. Patteson, Ltd., Manchester, 13; asphalt roofing and asphalt tile flooring, Limmer and Trinidad Lake Asphalt Co., Ltd., Manchester, 12; board suite furniture, Bath Cabinet Makers, Ltd., Bath; suspended ceilings, Beaumonts (Manchester), Ltd.; kitchen equipment, Falkirk Iron Co., Ltd., Leeds, 3; internal wood screens and joinery, J. Gerrard and Sons, Ltd., Manchester; sliding folding door, Bolton Gate Co., Ltd., Bolton.

Suppliers: Facing bricks, G. Tucker and Son, Ltd., Loughborough, Leicestershire; paint, Mander Bros., Ltd., Wolverhampton; sanitary fittings, Shanks and Co., Ltd., Manchester, 3; ironmongery, Laidlaw and Thomson, Ltd., Manchester, 4; mirrors, Charles Lightfoot, Ltd., Manchester, 13.

OFFICE BUILDING AT WYTHENSHAWE, MANCHESTER

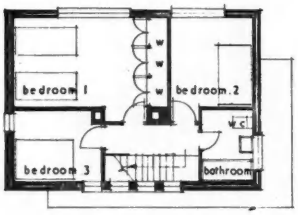
View of centre wing.

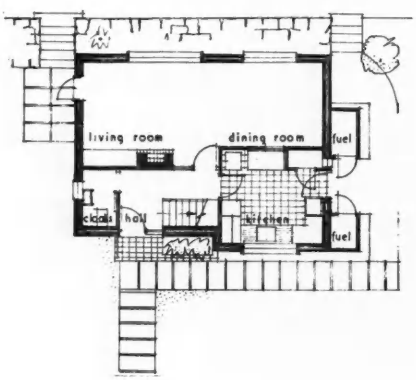
Garden elevation. Below: Plan.

HOUSE AT BRENTWOOD, ESSEX

Architect
DOUGLAS H. AUSTIN, ARIBA

Builders
A. SAUNDERS & SON (BRENTWOOD), LTD



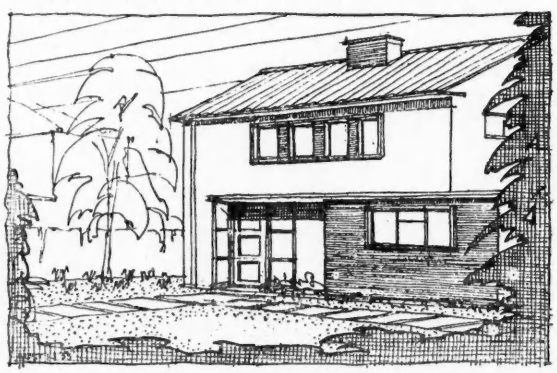


THE architect built this house for his own occupation on a site facing due south, and on the main London road, and in what was part of the garden of an adjoining residence. Windows facing the road have been kept to a minimum to avoid traffic noise, and all principal rooms are planned on the garden front facing south.

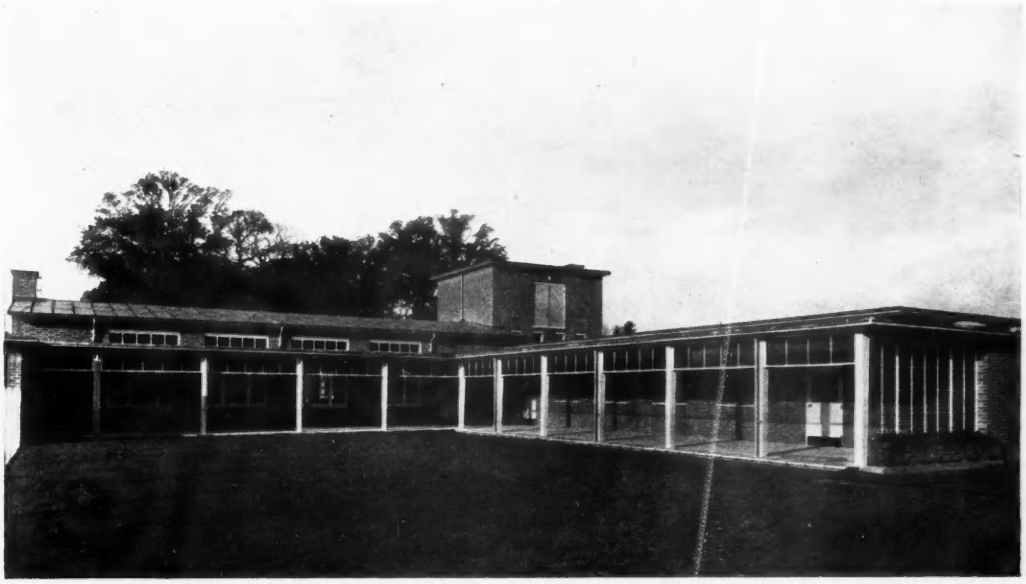
External walls are part Rustic Flettons treated with Snowcem, and part hand-made facing bricks. The roof is covered with dark brown interlocking concrete Roman tiles. A solid-fuel boiler in the kitchen feeds radiators in all bedrooms and the dining-room, and a convector fire in the living-room also supplies warm air to the hall and landing. The ground floor is finished throughout with thermo-plastic tiles and first-floor ceilings with insulation board. Decoration is in emulsion paint and washable distemper.

Provision is made for future extension, comprising a study and two bedrooms. The following sub-contractors were engaged :

Bricks, Broad and Co.; roof tiles, Redland Tile Co.; windows, Henry Hope and Sons, Ltd.; floors, Semtex, Ltd.; kitchen fittings, Rippers, Ltd.; fireplace and sanitary fittings, O'Brien Thomas, Ltd.



Front elevation.



View from south. Below : View under dormitory verandah.

Villa for Mentally Deficient Patients, *LITTLE PLUMSTEAD HOSPITAL, NORFOLK*

Architect to East Anglian Regional Hospital Board
GUY ALDIS, ARIBA

Deputy Regional Architect
W. K. FERGUSON, ARIBA

Senior Architect-in-Charge
R. E. MANWARING, ARIBA

Principal Assistant Engineer
E. L. TAYLOR

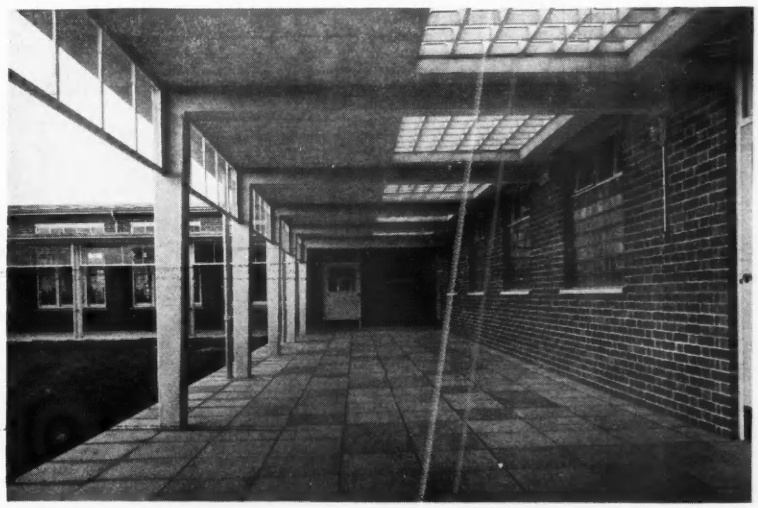
Senior Assistant Engineer (Electrical)
M. J. BURKE

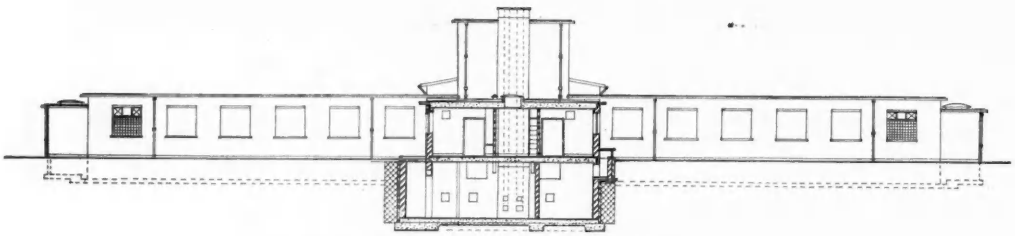
Quantity Surveyor
W. G. BROWN

Clerk of Works
S. SPARKES

Builders: T. GILL & SON (NORWICH), LTD.

THE villa was designed to provide accommodation for 52 lowest-grade mentally deficient patients and to afford the maximum amount of ease for the nurses while at the same time reducing the number of nursing staff required to the minimum. The type of patient to be catered for demanded that the finishes should be extremely hard wearing and that the toilet arrangements should be ample, thus operating with the least possible fuss. It also had to be borne in mind that the toilet area would have to be





Cross-section. Below: Plan.

hosed down at fairly frequent intervals.

At the outset, consideration was given to the possibility of supervising all patients at night by one nurse only, thereby easing the staffing problem. This has been achieved, a nurse being housed in a kiosk which can be locked and from which all electrical switches are operated.

The sliding and folding partitions in the dormitories will be kept locked during the day (the building being used on its north / south axis) and flung wide open when the patients are put to bed (axis changed to east/west). The sliding and folding partitions in the day room serve the multi-purpose of enabling quiet and noisy patients to be segregated, a separate dining area and, on some occasions, provide privacy for patients when meeting their visitors.

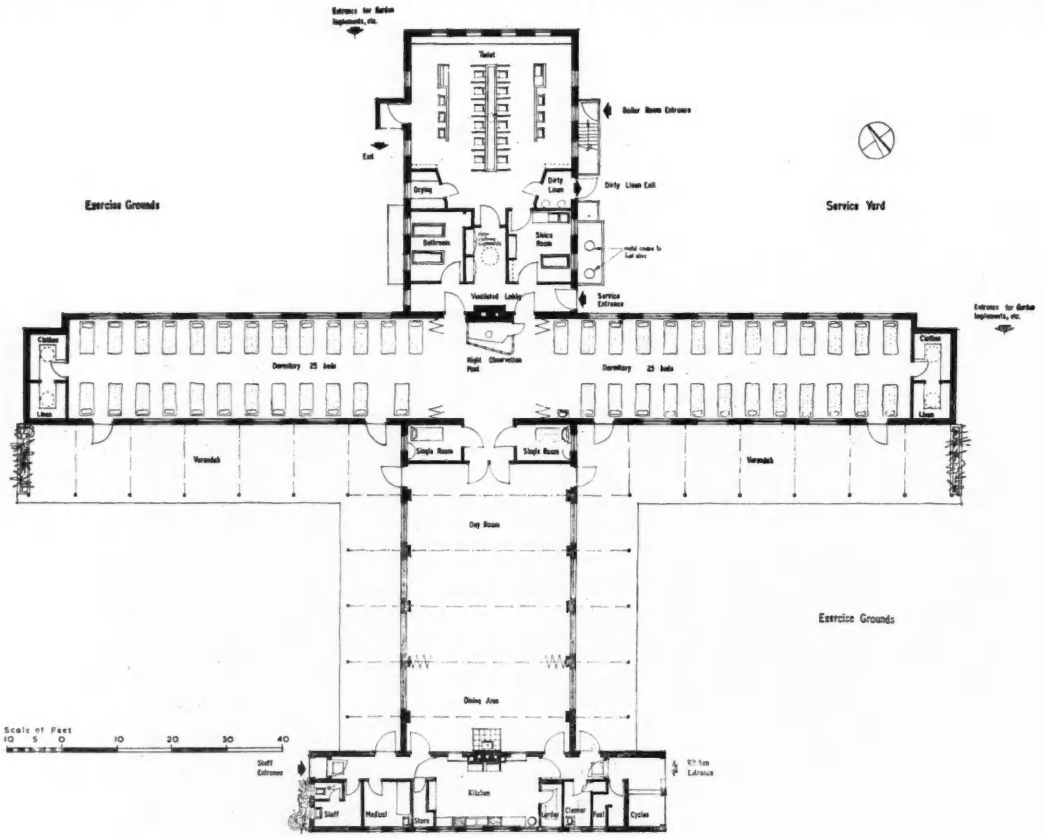
The plan was devised after lengthy research into the habits and requirements of this particular type of patient and, it must be said, signals a radical departure from the type of plan which for a long period was recommended by the Board of Control.

In the day room, on the other hand, traditional wood double-hung sashes with clear glass were used, with centre-hung clerestory lights over.

The dormitory and day room has radiant-heated floors, this particular form of heating being a medical request, and the remaining rooms are heated by low-temperature heating panels. Crawlways and floor ducts have been constructed to carry the service mains and all pipes have been placed in vertical chases to stop interference by destructive patients. The heating chamber is in the basement, housing cast-iron sectional boilers having automatic stokers.

The walls are constructed of 11-in. cavity and 13½ in. solid load-bearing brickwork with reinforced concrete roofs over the sanitary blocks, dormitory and kitchen block. The day room has a copper roof on wood-wool slabs supported on eight steel trusses. The concrete roofs are insulated with 2-in. wood-wool slabs and foam slag screeds; the roof finish being three-layer bituminous roofing. The roofs over the verandah are reinforced concrete supported on half portal frames.

The ceiling over the day room is suspended from the metal trusses



View of habit-training unit.

and consists of $\frac{3}{4}$-in. insulation board, with chamfered edges, in 2 ft. by 2 ft. panels. The remainder of the ceilings are plastered.

The floors generally are 9 in. by 9 in. by $\frac{3}{16}$ in. thermoplastic tiles, the exception being the kitchen and toilet block which have 9 in. by 9 in. by $\frac{7}{8}$ in. heather-brown quarry tiles.

The contract price of £80,443 16s. 7d. (including abnormal and outside works) is for the construction of two villas, one each for male and female patients. The villas are identical in design and construction, except that minor modifications have been made in the respective toilet areas to cater for the different sexes. Following were sub-contractors and suppliers:

Electrical installation, P. H. Allin and Sons (Cambridge); central heating, G. N. Haden and Sons, Ltd.; damp-courses, asphalt tanking and floors, Lawford Asphalte Co., Ltd.; bituminous roofing felt, Standard Flat Roofing Co., Ltd.; reinforcement, Trussed Concrete Steel Co., Ltd.; bricks (facings), Builders Direct Supply Co., Ltd. (Norwich), (commons), London Brick Co., Ltd.; copper roofing, W. J. Taylor (Norwich); terrazzo partitions, Jaconello, Ltd.; patent glazing and dome lights, Mellowes and Co., Ltd.

Metal windows, Mellowes and Co., Ltd.; sanitary fittings, Adamsez, Ltd.; sliding and folding partitions and joinery, T. Gill and Son (Norwich), Ltd.; suspended ceilings, Sundeala Board Co., Ltd.; thermoplastic tiles, Holmes (Norwich), Ltd.; locks, Wing and Webb, Ltd.; ironmongery, N. F. Ramsay and Co., Ltd.; metal trusses, Cocksedge and Co., Ltd.; quarry tiles, Denis Ruabon, Ltd.; roof lights, J. A. King and Co., Ltd.

VILLA FOR MENTAL PATIENTS, LITTLE PLUMSTEAD HOSPITAL, NORFOLK

Dormitory from observation area.

"Lethaby and His Times"

PROFESSOR BASIL WARD'S LECTURES

MR. BASIL WARD, FRIBA, Hon. ARCA, Lethaby Professor of Architecture at the Royal College of Art, gave his third lecture of this series at the Victoria and Albert Museum on November 29.

Lethaby was Professor of Design at the College for many years, and the Lethaby Chair of Architecture was established in 1953 to commemorate him. The first two dealt with Lethaby's character and background as influences affecting his outlook and work; the second, noted in *The Builder* of April 9 last, was given at the RIBA on March 17. In some ways the V. and A. lecture theatre, physically and otherwise closer to the college than to the museum, was more congenial to both subject and treatment. Ward's matter-of-fact approach, at once sympathetic and objective, was very welcome at a time when popular interest in the period is becoming more "fashionable" than scholarly. If this is not to bring, with the successive wavelets of revivalism, the superficial jetsam of such comparative incidentals as *art nouveau* into currency again, serious examination of the causes, for the revolts they represent, is essential: the Lethaby lectures are therefore timely, and the subject could not be in more authoritative hands than Basil Ward's.

Among the important points he established was that when artists, working far apart in the state of communications obtaining early this century, simultaneously reach much the same aesthetic conclusions, something more than mere fashion or arbitrary aesthetic preference is involved. This cannot be said too often: so long as the public suspects the existence of some common "copy-book" the swings of the artistic pendulum will appear to them arbitrary and irritating whimsy, like fluctuating hem- and hip-lines, rather than having philosophical justification.

Again, the lecturer reminded us that Lethaby, echoing Butler, said that the important thing is what you see "when you turn away." This is, of course, accepted to-day, but the aphorism probably eluded, or shocked, the Victorians! Indeed, the significance of Lethaby and his contemporaries lies in what they did and said *at that time*, and the fact is apt to be overlooked. They represented the antithesis of the hearty, uncomplicated representationalism of the period, but paradoxically preferred truth to accuracy, and Lethaby's revolt from "blind, puffy, bigwiggy" architecture was similarly part of his search for truth.

"DANGER OF THE MACHINE"

Lethaby, however, did not necessarily reject the machine, nor its "minder" the engineer, but only warned against its improper use, and in this differed from some of his contemporaries. In 1911 he stressed the engineer's importance and later postulated the synthesis of architecture and engineering, though (the lecturer added) we may have lost more than we have gained in the subsequent pursuit of that thesis. To understand Lethaby and his times, Basil Ward said that we must look beyond the usual facile explanations. He and his contemporaries recognised and accepted the social implications of what they were doing, but this was a concept misunderstood by their generation, who labelled them as "moralists" at a time when art and ethics were not supposed to mix.

The lecturer illustrated his theme with slides of the work of Gaudi, Mackintosh and van de Velde—though contrasted, each in his way a prophet not without honour even in his own country and time. In conclusion, he invited his audience to see in Lethaby and his contemporaries the release of a particular type of temperament diametrically opposed to what had gone before. Substitute the debased materialistic standards of our new "haves" (in terms of purchasing power) for their Victorian counterparts, and not dissimilar conditions apply to-day. One looks forward with lively interest to the fourth of the series, not only for its intrinsic interest but also for the lesson it will contain.

BASIL MARRIOTT.

EDUCATIONAL BUILDING

New Proposals

THE Government has decided to make additional resources available for investment in educational building. In particular, control over the amount spent on projects up to £10,000 is to be abolished, action will begin at once to reorganise all schools in rural areas, and the scope of building for vocational education will be enlarged.

Further details of the new proposals were given by the Ministry of Education in a circular (No. 283) to local education authorities on Monday.

Sir David Eccles, the Minister of Education, asks county authorities to submit, by January 15, proposals for the reorganisation of secondary education in rural areas which can be started by March, 1956. "The Minister desires particularly to assist the rural areas," the circular states, "especially those which have not been able to benefit from the building policies hitherto in force." He proposes as a first step to add to the 1955-56 programme as much work for the reorganisation of secondary education in rural areas as can be started in that year.

It is confidently expected, it is stated, that all the work needed to complete reorganisation of secondary education in rural areas will have begun within five years from now.

Also by January 15, local education authorities are asked to give details of their plans to provide additional accommodation for further education. Sir David Eccles "attaches great importance to the expansion of facilities for technical education and proposes to remove the restrictions which limit provision to a number of industries." The Minister wishes to see additional accommodation provided for a wider range of vocational courses and is anxious that certain major colleges should be able to shed lower grade work and have more freedom to provide advanced technology and research.

In addition to the above, the new proposals will affect primary and secondary schools generally, voluntary schools, training colleges, special schools, provision of playing fields, youth and adult welfare.

The Minister has decided immediately to raise the limit of cost for individual minor projects from £7,500 to £10,000 and simultaneously to abolish the limit on the total value of minor projects which may be started in any year.

DETAILED PROPOSALS

Detailed proposals are as follows:—

Primary and Secondary Schools.—Provision of new places to match the increase in the school roll and the movement of families to new housing areas will continue to make heavy demands on resources for several years. The programme for primary education will consist mainly of schools for new housing areas which cannot reasonably be served by existing schools. The bulk of the new building must be for secondary school pupils because their number is expected to increase by more than 700,000 between the beginning of 1954 and the end of 1960.

Voluntary Schools.—The Minister will be prepared to entertain proposals for new voluntary schools which form part of a local education authority's considered plan for reorganising its rural areas. Voluntary school managers and governors will also be able to take advantage of the greater freedom to undertake minor works.

Playing Fields.—Major or minor projects for the development of school playing fields will be considered by the Minister in respect of either new or existing schools.

Training Colleges, Special Schools; School Meals. — Training colleges for teachers, special schools for handicapped children, and school clinics will all benefit from the decision to raise the limit of cost for minor projects from £7,500 to £10,000. The limit of cost for school meals projects will be £1,500.

Youth and Adult Welfare.—The Minister proposes to relax the present restrictions on direct grants to voluntary bodies and local authorities towards the cost of village halls, community centres and youth clubs.

General.—The circular supersedes Circular 245. It is emphasised that the new proposals will make heavy demands upon the financial resources of the Ministry and of local authorities—both must exercise restraint in expenditure on "marginal and ancillary services not essential to the success of the new developments."

The circular concludes by stating that the Minister relies upon authorities to husband their resources and to make vigorous use of their greater freedom in matters of capital expenditure.

*** The Minister's statement on this subject in Parliament is reported on page 950.—ED.

BOOKS RECEIVED

ALVAR AALTO AND FINNISH ARCHITECTURE. By Eduard and Claudia Neuenschwander. (London: Architectural Press.) Price 50s.

ENGLISH MEDIÆVAL ARCHITECTS. By John Harvey. (London: B. T. Batsford, Ltd.) Price 75s.

KNOW YOUR HOUSE. By Eric Ambrose. (London: Thames and Hudson, Ltd.) Price 15s.

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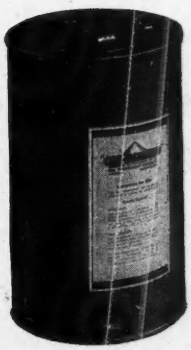

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News of the Week

NEW BARBICAN PLAN

THE Court of Common Council, at its meeting on December 2, rejected the New Barbican Committee's scheme for redevelopment of an area of about 40 acres in the City of London. (A critical report on the scheme prepared by the improvements and town planning committee, which was approved at the meeting, was summarised in our last issue.)

Captain A. Instone, who moved that consideration of the report be deferred for three months, complained that members had been acquainted with details of "a very great conception" for only a few days.

Mr. C. F. Glenny, chairman of the improvements and town planning committee, claimed that it would be disastrous to suspend all other development operations now proposed for the area, and if members accepted the principle of development in stages much of the ground would be derelict for years to come.

The amendment was negatived, as was a further proposal to adjourn the discussion until the next meeting of the court. The motion to delete the reference to a further report by the committee was carried in a division by 46 votes to 28, and the report as amended was approved.

Despite the critical observations expressed by the improvements and town planning committee on their scheme, the New Barbican Committee, it is understood, have decided to continue with their project.

It was stated that the committee believed they had a technical right to continue as well as a public duty to perform. They did not think their scheme had been properly understood, and believed it to be far more in the social, financial, and national interest than the report before the Common Council had indicated.

THE NEW PRA

AT A GENERAL ASSEMBLY of Academicians held on Tuesday, Professor A. E. Richardson, RA, was elected president of the Royal Academy in succession to Sir Gerald Kelly. Professor Richardson, who is 74, will have a year in office.

That year should be a lively and profitable one for the Royal Academy. The new president is a man of wide knowledge and ability in matters of art. As architect, artist, writer and speaker he brings together in one person qualities which admirably fit him for a post much in the public eye. He is the fourth architect-president, the others being James Wyatt (1805), Sir Aston Webb (1919) and Sir Edwin Lutyens (1938).

THE LATE C. A. FAREY

WE REGRET to record the death, which took place on Tuesday, of Mr. Cyril A. Farey, FRIBA, at the age of 66. The funeral will be private, but donations may be sent to the Architects' Benevolent Society, 66, Portland-place, W1. A memoir will appear next week.

RIBA LIBRARY GROUP

AT the next meeting of the RIBA Library Group, which is to be held on December 13, Mr. D. Stratton Davis, ARIBA, will give a talk on J. B. Papworth.

LMBA AREA LUNCHEON

DR. R. L. JAMES, headmaster of Harrow School, is to be the guest of honour of the LMBA's No. 3 Area at a luncheon in the Connaught Rooms on Friday next, December 17. Mr. W. L. Barker, chairman of the Area, will preside.

Among others attending are Mrs. L. M. Jeger, MP for Holborn, Mr. V. Collins, MP for Bethnal Green, Sir Anthony Pickford, former town clerk of the City of London, Mr. A. P. Humby, Regional Director, Ministry of Works, Newcastle, the president of the LMBA and the president and secretary of the National Federation of Building Trades Operatives in London.

THE INSTITUTE OF BUILDERS' new past-presidential badge (see note).

NEW IOB BADGE

THE Institute of Builders has inaugurated a past-presidential badge to be given in future to each president on his retirement from office. The badge is described as a handsome silver medallion showing the coat and crest from the Institute's grant of arms.

At a council luncheon on November 24, the first badges were presented, and the president, Mr. F. Leslie Wallis, introducing the simple ceremony, said he hoped the badges would be worn at all important occasions connected with building.

The past-presidents able to accept the Council's invitation to be present on this occasion were, Mr. R. L. Roberts, CBE, Mr. Ernest Holloway, Mr. William H. Lee and Mr. Harold H. Ridge.

Mr. Harvey G. Frost, OBE, FIOB, who has been nominated President for 1955 of the National Federation.

NATIONAL FEDERATION

Presidential Nominations

MR. HARVEY G. FROST, OBE, of Bury St. Edmunds, Suffolk, has been nominated by the Council of the NFTBE to be president of the Federation in 1955. Other presidential nominations by the Council are:—senior vice-president: Mr. Nigel Hannen (London); junior vice-presidents: Mr. L. A. Walden (Henley-on-Thames) and Mr. C. P. Howells (Caerphilly).

The annual general meeting of the National Federation will be held in London on January 26 next.

NFPC Annual Meeting

THE NATIONAL FEDERATION of Plastering Contractors held its fifth annual general meeting on Wednesday, December 8, at the Piccadilly Hotel, London. The Council of the Federation have decided to nominate the following to be officers of the Federation for 1955:—president, Mr. J. S. Cook (Cambridge); senior vice-president, Mr. A. R. Ball (Liverpool); junior vice-president, Mr. A. C. V. Telling (Bristol); honorary treasurer, Mr. H. Humber (London); immediate past-president, Mr. R. A. Atkin (Cardiff).

FROM "THE BUILDER" OF 1854

Saturday, December 9, 1854

THE SPACE NEAR ST. PAUL'S. — The Committee of the Institute of Architects have published some letters showing what had before been made public, that Lord Palmerston stated, in reply to the suggestion that the continuance of the coal-duty for one year beyond the time fixed for its expiry would supply the necessary funds to supply the loss caused by not building on the land, that "Parliament would not be willing to extend the existing coal-duty. It also appears to their lordships that the proposed improvements near St. Paul's are matter peculiarly for the consideration and decision of the corporation of the City of London, whose revenues are large, and not of the Government." By whatever means, it is most desirable that the space should be kept open for ever.

High Building

A DISCUSSION concerning high building was held on December 7 by the Structural and Building Engineering Division of the Institution of Civil Engineers, Great George-street, London, SW1. Papers were presented for discussion dealing with the social and economic advantages of high building; problems of framework and foundation construction; and traffic problems resulting from high building. Summaries of the papers are given below.

High Buildings: Their Social and Town-Planning Significance

HIGH buildings were defined by MR. SERGEI KADLEIGH, ARIBA, as those structures which were at least 200 feet in height, or 20 or more storeys. The question why the erection of such buildings has not found favour in England was discussed in relation to the history of the last 150 years. The growth of the humanitarian movement from the beginning of the 19th century was traced in relation to the parallel development of science and technology, industry, population and accumulated credits abroad. Mr. Kadleigh showed how the early beginnings of the humanitarian movement had culminated in the "welfare state" and its "development plans" based on the traditional form of "model town." While the population had quadrupled, there had been great advances in science and technology and the nation's credits had changed to debts which made the century-old conception of a "model town" dangerously out-of-date.

The resulting situation, apparent in to-day's "decanting overspills," was then considered, together with its effect of upsetting the balance between town and countryside and the ominous tendency to prescribe mass migration of families away from the ties of their native districts. The use of high buildings with the "multiple use of land" was put forward as an alternative up-to-date method of reconstructing our congested cities. This alternative took into account recent developments, offered a cure for "decanting overspills," preserved the countryside, and concentrated efforts on reclaiming the central urban areas.

In conclusion, an example was given of this alternative method of development as applied to a typical urban borough. It was shown that there existed sites at present not considered suitable for development, but which could be developed to house complete communities of 8,000 to 10,000 people, with amenities and benefits not normally considered possible in the centres of our cities. People could be housed in the areas of their choice, slums cleared, central boroughs could have parks and playing fields, traffic congestion could be eased, and this could be achieved without the necessity for a permanent state subsidy or for building on agricultural land.

Design of Building Frames

A METHOD, based on the ultimate-load theory, of determining the wind stresses in multi-storey Vierendeel frameworks of more than one bay was discussed in a paper by PROFESSOR A. L. L. BAKER, DSc, MICE. Other structural forms for resisting wind pressure were also discussed, as were various elastic theories which have been used for the analysis of building frames.

The design method proposed used simple formulae and was a further development of a trial-and-adjustment procedure of design, using the plastic-hinge theory which assumes a suitable disposition of plastic hinges. With the aid of tabulation, a trial-and-adjustment procedure was followed until members of the framework had their appropriate stiffness-values, and plastic-hinge sections their appropriate bending-moment-values.

Professor Baker extended his process to the special case of a four-bay framework any number of storeys in height. It was shown that a set of curves could be prepared from which the maximum rotations of plastic hinges could be quickly determined, provided various stiffness-ratios of the framework lay within certain limits. It was shown that, for many frameworks which might occur in practice, stiffness-ratios would lie within the required limits and the rotations which develop at the hinges would not be excessive. The curves, together with limiting stiffness-values and plastic-moment-values, defined conditions for which simple formulae might be applied with regard to bending moments due to vertical load and wind load.

Foundations for High Buildings

IT was pointed out by MR. A. W. SKEMPTON, DSc(Eng), AMICE, that the construction of high buildings had been a great stimulant to the art and science of foundation engineering. Improvements in construction methods and structural techniques, and in soil mechanics had made it practicable to construct buildings of ten or 12 storeys on all but the worst ground. A site could be developed, therefore, to greater advantage than was possible in the past, when it was often considered that foundation difficulties imposed a height restriction incompatible with the true needs and requirements of a social or business community. The greatest advantage of high building was that, without increasing the population density or the floor-space ratio above desirable or accepted limits, much of the site could be released as open space.

Consideration was given to each of the main types of foundation; namely, spread footings, rafts, piles, piers, and combined raft and pile foundations. A short account was given of some of the leading principles governing their design, but a considerable proportion of the paper was devoted to the illustration of actual examples of foundations. The illustrations were drawn from many parts of the world, in order to obtain a wide diversity of soil conditions. Buildings with spread footings included a steel-framed, 16-storey Chicago building of 1894, founded on the compressible clay of that city.

The first New York skyscraper to be founded on piers to rock, by means of compressed-air caissons, in 1893, was mentioned as the prototype of such giants as the 50-storey Woolworth Building. As an example of the open-type caisson, the 45-storey Board of Trade Building in Chicago was described. Attention was directed to the combination of piles with the buoyancy of the deep raft. By this means high buildings had been constructed in notoriously difficult situations such as New Orleans and Mexico City, where a recent 40-storey office block provided an outstanding example of modern foundation engineering. The paper included some remarks on the problem of foundations for high buildings in London and an illustration was given of a design for the foundations of a proposed large 38-storey building at Paddington.

High Buildings: Traffic and Parking Problems

TRAFFIC difficulties brought about by large buildings and intensified by high structures, were discussed by MR. S. J. CHAMBERLAIN.

Serious conditions arose if many high buildings were put up in an area where few, if any, road alterations had been made to improve an old street plan. In some areas in central London, the traffic generated by such buildings put a serious strain on roads never designed for a large amount of traffic. Since main-road traffic had also increased, and traffic to the larger buildings used road space in semi-main roads previously available to through-traffic, the movement of vehicles generally was greatly hampered. In addition, the large number of employees and callers necessitated an increase in the number of public-service vehicles in the area.

The parking problem might be an even more difficult problem than that of circulation. If standing cars were allowed to clutter up public highways the result was a very serious reduction in the traffic capacity of the area. So far, the amount of parking accommodation provided off the highway had been very small and, although some accommodation had been provided for vehicles loading and unloading within buildings, the major problem remained of accommodating cars belonging to occupants and callers.

Remedial measures were discussed. So long as the inherited street lay-out remained the construction of larger and higher buildings would present an ever-increasing problem. Arrangements such as round-about working, one-way operation, and the installation of traffic signals could be adopted, but the capacity of streets could not be increased indefinitely without drastic alteration and the provision of entirely new roads over a wide area. The only measures which remained were to impose increasingly restrictive measures against vehicles standing on the highway, which would be unpalatable to public and police alike. If very high buildings were to become more common, the parking problem could be tackled only by the allocation of space within buildings, underneath buildings, and elsewhere off the highway. Care would be required in designing and siting the parking spaces, but, without a vigorous contribution of this kind in central areas of cities, a partial or complete strangulation of traffic would take place.

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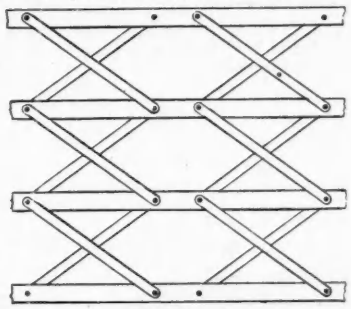

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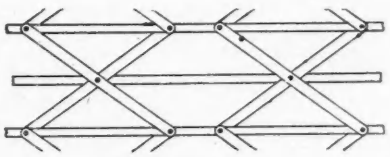

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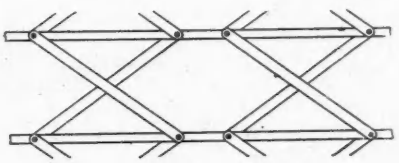

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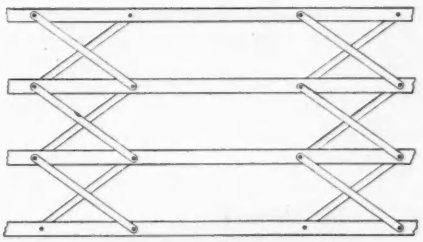

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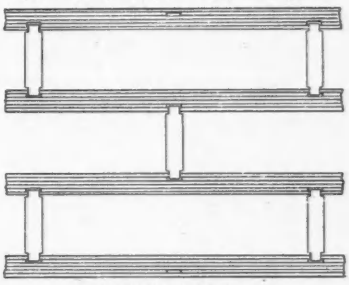

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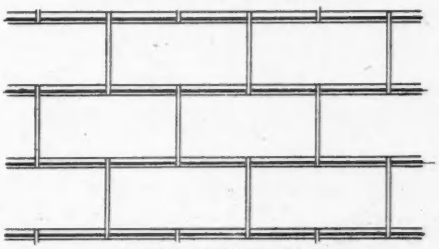

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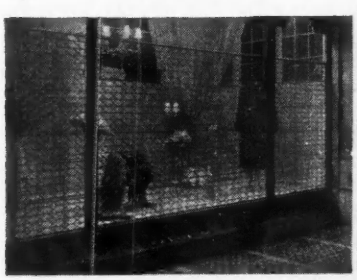

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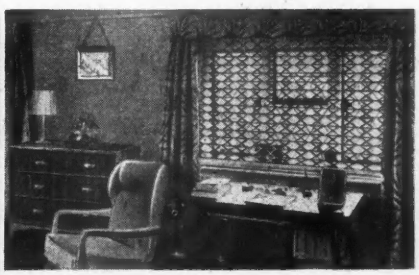

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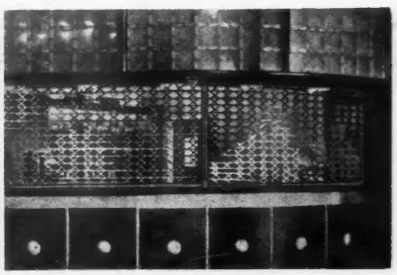

TIB 133

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The New Town and Country Planning Act

TOWN PLANNING INSTITUTE PAPER

THE new system of compensation under the Town and Country Planning Act, 1954, for planning restrictions on development and the compulsory purchase of land was outlined by MR. DESMOND HEAP, LL.M (LM), in a paper entitled "The New Town and Country Planning Act—1954 and After," given at a general meeting of the Town Planning Institute at the Livingstone Hall, Westminster, on December 2. We take the following extracts from his paper:—

The position, summed up, appears to be this. Betterment collection is, and always has been, fraught with difficulties. The last attempt at this collection (through the medium of development charges) appeared to be hated generally and was abandoned, to the great delight, or so it seemed, of everyone. But this having occurred, it is difficult to see how the new Act could fail to peg back development values to 1947, thereby relieving the community from having to pay for post-1947 development values whenever it wanted to plan, or to acquire compulsorily land in the public interest. Those who are prepared to accept, on the one hand, the abandonment of betterment through the abolition of development charges and yet continue to press, on the other hand, for full compensation for all planning restrictions, should remember that what they are really asking for is the putting back of the planning clock not to 1947 and not even to 1932 but to something much earlier than that. They are, in fact, completely shutting their eyes to the fact that, as the Uthwatt Committee reported, there exists a compensation-betterment problem indissolubly associated with land planning and that without its solution control of land use cannot be properly carried out.

FACING THE PROBLEM

The 1932 Act never properly faced the problem. The 1947 Act faced it dispassionately and logically and made a valiant though abortive attempt to solve it. The 1954 Act steers a middle course between the 1932 Act and the 1947 Act. Less logical than the 1947 Act it nevertheless avoids the theoretical excesses of the earlier Act and although by no means perfect from every point of view (it is admittedly a compromise), it does not necessarily follow that it will not work in practice or that it is bound to be swept away after a short period of years. Indeed, whenever I hear prophecies of the early demise of the 1954 Act I ask myself this question—if the principles of the 1932 Act did not make a genuine effort to solve the compensation-betterment problem of land planning, and if the principles of the 1947 Act valiantly tried to do so but failed, then if the new principles embodied in the 1954 Act are also to fail, *what then are the principles on which this vexed question can be solved*? The proof of the pudding is in the eating; the new Act must be given a genuine trial and we must wait and see.

In the discussion which followed the paper, LORD SILKIN said that it should be realised that in future, under the new Act, planning decisions were going to be dominated by finance. Town planning committees were sometimes—not universally—soft-hearted, and possibly the committees were more so than their officers. Cases did not always go to them. It was difficult for the committees to pick out individual cases. Officers, he felt, should draw the attention of their committees to important cases where hardship was likely to be involved. Often the committees would be moved by hardship and grant an application which they ought to refuse. This position would often arise in cases of compulsory purchase. Here there were two kinds of local authorities. There was the kind who would be deterred from making a compulsory purchase order on land eminently suitable for development because they could not adequately compensate the owner. There were other local authorities who would deliberately pick out a piece of land which was cheap and could be bought on the existing use value at the moment. In neither case were they doing their job.

The proof of the pudding, Lord Silkin pointed out, was in the eating, and the new Act must be given a genuine chance. He personally wished the 1947 Act had been given a genuine trial. It was declared a failure a few months after it came into operation, and he felt that if it had been given a fair trial, they would have been discussing the success of the 1947 Act.

SIR SYDNEY LITTLEWOOD, chairman of the Town Planning Committee of the Law Society, said he had spent some 35 years in his profession dealing with Acts of Parliament and thought the draughtsmen were getting worse and their Acts increasingly difficult to understand. The new Town and Country Planning Act was an absolute brute, and he was a wholehearted believer in the 1947 Act. There was no country in the world where planning was so important as Britain, because no country was so thickly populated or had such a land scarcity. Mr. Heap had told them that the new Act was an attempt to deal with the matter because the other Act had failed. If the new Act failed, he did not know where they would get to. It would be a dreadful thing for all of them and it was up to them all to do their utmost to see that it worked. It was an important matter not only for town planning authorities, but for those whose duty it was to advise on these questions.

MINISTERIAL SUPPORT

Criticising the Act, MR. E. M. H. STEVENS told the meeting that nine months ago he had had the duty of reading the Bill as originally drafted and preparing an explanatory memorandum for internal office use. He had found it impossible to understand. He thought there was one variable factor which was going to dictate the future planning climate, and that was the strength of the reigning Minister in upholding the reasonable decisions of planning authorities where compensation was involved. That the Minister would do so he had no doubt, as long as he was securely insulated from outside pressure by his surrounding technical advisers. There was, however, one enigma which hovered in the background and which cast its shadow in accordance with the position of the economic sun in the sky at any particular moment. He referred, of course, to the Treasury. If past experience was anything to go by, they had nothing to fear. Local authorities had been pleasurably surprised at the firm policy that the Minister had been following of late in support of them. However, these things were subject to changes of personalities and it was difficult to forecast the trend of future events.

The future would tell, but so much compensation was excluded from Sections 20 and 21 of the Act that the Minister might find little opportunity to use his review powers. He felt they had lost nothing by the new Act, except perhaps some of the antagonism of the public. The success of future planning would be measured by the human factor. If the Act failed, where would they go from there, short of 100 per cent. nationalisation of the land?

MR. HEAP replied that local authorities must be bodies of integrity in matters of planning and equal to their responsibilities. The new Act was necessarily complicated because it dealt with a complex subject. It was a sign of the times that the Act was not written so that the man in the street could understand it, and not necessarily so that lawyers could understand it, but so that what was in it should read in one way and one way only. He agreed that much depended on the strength of the Minister. The Minister was the man who had the final say in planning policy and had the right to take a decision from the planning authority and deal with it himself.

LCC

Contract Declarations

AT a meeting of the London County Council on November 30, MR. NORMAN FARMER asked the chairman of the General Purposes Committee the following questions: (i) Was he aware that every time a sub-contract was placed by the Council, a form of declaration had to be signed? (ii) In the interests of economy, both in time and materials, would he consider that, once a firm had given the declaration, this be regarded as sufficient, or alternatively that a declaration be not called for more than once a year?

The replies by MR. R. E. GOODWIN were as follows: (i) Yes. (ii) It is provided by standing order 234(1) that the main contractor shall not underlet or sub-contract except with the consent of the Council and in particular that such consent shall not be given until the proposed assignee or sub-contractor has given a written declaration in the prescribed form. This procedure is also applied to nominated sub-contractors. I shall be happy to arrange for the question of the desirability of modifying these arrangements to be looked into.

FIRE PRECAUTIONS

A second edition of "Fire Precautions in Small Halls used for Entertainment Purposes," No. 14 in their booklet series, has been issued by the Fire Protection Association, 15, Queen-street, EC4, and contains an additional appendix on the value of treating fabric stage properties.

IN PARLIAMENT

The Housing Programme

DURING the Commons debate on the Address to the Queen for her Speech in opening Parliament, MR. MANUEL described the passage in that Speech relating to the Government's proposals for house-building as not making sense. If, he said, there was a high rate of house-building both for letting and purchase, the slums could not be cleared away as one would wish. If Ministers were to allow half the houses built to be used for letting they would not move one step towards clearing slums in Scotland, and there would be terrific opposition from local authorities beyond the Border if the proportion of houses to be built for purchase was considerable. The housing problem in Scotland was so immense that it would be a tragedy for families living in the most appallingly overcrowded conditions to be denied the chance of a decent home because those with money could jump the queue.

Every house built for purchase meant a lessening of the effort to clear the slums, because those who would occupy such houses were not living in slum properties. People who were living in mean, miserable hovels, who saw houses being built for sale in their localities, would not accept the situation the Government might expect. In Scotland the Secretary of State, if he was considering dealing with the matter in the same way as the English Minister, should consult with local authorities first. They would give him a fair picture of how far he would be able to go.

MR. JAMES SIMMONS said that the Minister of Housing and Local Government had issued an order for the handing back of derequisitioned houses. His wife was chairman of the housing management committee in Birmingham, and had 50,000 on her waiting-list. She had been requested by the Minister to hand back "prefabs" and to hand back requisitioned houses. That meant that if Birmingham were to do everything which the Minister wanted no ordinary applicant would get a house for the next three or four years, because all new houses would be occupied by priority cases, such as tuberculosis cases. The Government ought to give power to local authorities not only not to hand back houses, but also to requisition all other houses which stood empty for more than a month. If they stood empty for more than a month they should be requisitioned and tenanted by people from the local authority housing list.

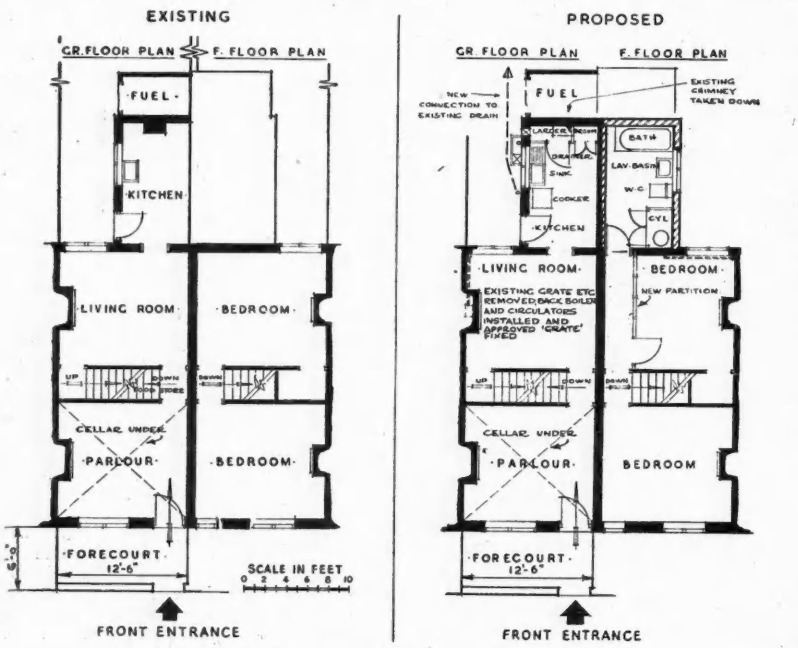
MR. GEORGE PORTER said that he had spent most of his life in the building industry, and the Government were talking about the wonderful development there had been in house-building during the last two years; but what they had gained on the swings they had lost on the roundabouts, for the building labour force had not been materially increased. They had only been able to build more houses because of the transference of building labour from other essential jobs to concentrate on house-building. Most of the foundations for the houses had been laid when the Labour Party was in power.

The type of house now being built was inferior to that being erected when the Labour Party went out of office. One of the first things the Government had done was to take six inches off at roof height, which meant that two double courses of bricks were being saved on each house. He had asked the Minister in definite terms about the savings involved in the new family type house. The reply he had received was that the quantity of bricks required varied widely according to the extent to which substitutes were used. But everyone knew that when substitutes were used the house ceased to be traditional. Another point which he thought might be of value in determining the relationship between the new and old type of house was the saving of money and time involved in the abolition of joinery work eliminated from the present type. But the Minister regretted such information was not available, although he must have known the purpose for which it was required and been determined it should not be obtained.

He had, however, learned that three-bedroom houses constituted 80.4 per cent. of all houses being built by the Labour Party in 1949, but that type only represented 67.9 per cent. of all houses being built in 1953. The two-bedroom type represented only 11.1 per cent. under the Labour Government, but under the Conservatives it was 23 per cent. If the Government were using subterfuges of that kind—that the type of house was not as good as that being built under the Labour Government, and that they had a reasonable groundwork laid by the Labour Government on which their houses could be built—there was no reason why they should not take credit for the present state of affairs. He did not agree that the Labour Government, with their balanced programme of houses, plus schools, hospitals and factories, were not making a better contribution to the nation's social life than the present Government were doing, or had been doing, by concentrating on house-building.

"THE BUILDER" GRAPH

Concluding the stages of the Debate on the Address on Tuesday, Mr. Herbert Morrison, Deputy Leader of the Opposition, winding up in their attack on the Government's economic policy, referred to the abandonment of controls in the building industry. He said the Government asserted that they had set the industry free and that more was going on there than ever before. *The Builder* had recently published a graph which showed an increase in wages, and also building materials and building costs had shown a considerable increase of recent years. In 1951 according to the index they were about 250 compared with 100 in 1938, and in 1954 they had reached 330. Local authorities were having difficulty about the delivery of materials, and the prices tendered were going up, as were prices for private individuals who were getting houses built for themselves. These disadvantages were largely the product of the Government "letting the industry rip" and go to pieces without any reasonable supervision or insistence



Plans showing how existing houses have been modernised.

DEMONSTRATION HOUSES AT STOKE-ON-TRENT

THE way in which soundly built old houses can be improved and brought up to modern standards with the aid of improvement grants is shown in a group of demonstration houses which were opened at Stoke-on-Trent, on November 24.

Four houses, which are over 70 years old, have been improved by the addition of bathrooms and w.cs., complete modernisation of the kitchens, and the installation of up-to-date hot water systems, larders and broom cupboards, and the provision of modern fireplaces in the living-rooms. The fourth house has been left in its original condition so that visitors may see clearly the extent of the improvement.

The demonstration is being staged by the Stoke-on-Trent City Corporation to show house owners the advantages to be gained by making use of improvement grants. The total improvement cost was £318 per house, of which £159 could be obtained in grant.

ELECTRIC LIGHTING

LAMPS AND LIGHT FITTINGS

Light fittings have two major functions: to distribute as much as possible of the light emitted from the lamp in the required directions and intensities, and to reduce the brightness of the lamps to a comfortable level at which all risk of glare or discomfort is eliminated. Their appearance is generally subordinated to these requirements where efficiency is of primary importance.

Filament Lamps

The type of lamp most widely used is known as the General Lighting Service Lamp (G.L.S.); the normal finishes for the bulbs being clear glass, internally frosted ('pearl') and internally silica coated. As there is no appreciable loss of light through pearl or silica-coated glass, clear glass bulbs should not be used unless hard shadows or glitter are required, as in some forms of display illumination. Silica-coated bulbs have a lighted appearance almost identical with the old 'opal' lamps, but their efficiency is considerably higher and they cast softer shadows. They are therefore recommended for open fittings in general and domestic lighting in particular, being obtainable in the following wattages: 40, 60, 75, 100, 150 and 200 watts. The average life of a filament lamp may be taken as 1,000 hours, throughout which period it operates with a standard light output.

Fluorescent Lamps

Fluorescent lamps are basically mercury vapour discharge lamps operating at a very low vapour pressure and generating ultra-violet radiation which is absorbed by the fluorescent powder lining the tube and re-emitted as visible light. Two types are in use—the familiar mains voltage (Hot Cathode) type, and the high voltage (Cold Cathode) type with longer tubes. Only the mains voltage type of fluorescent lamp is considered in these notes. These lamps give at least three times as much light as filament lamps of the same wattage, and operate at low surface temperatures with the emission of relatively little radiant heat: their life is approximately five times that of a filament lamp, the standard rating being 5,000 hours. They have a much lower surface brightness, and their light is evenly distributed.

Their overall efficiency and economy will often be found to outweigh the disadvantages of higher first cost (due to the need for control gear and larger light fittings). Fluorescent lamps of different wattages are not interchangeable in the light fittings as are filament lamps; their colour-rendering properties are more critical than, though not necessarily inferior to, filament lamps. Hot Cathode lamps are obtainable in the following sizes and wattages: 15 watt, 1 ft. 6 in. long; 20 watt, 2 ft. long; 40 watt, 2 ft. long and circular 16 in. diam.; 30 watt, 3 ft. long; 40 watt, 4 ft. long; 80 watt, 5 ft. long.

Fluorescent Lamps with Filament Ballast

Fluorescent lamps may be used with a resistance instead of an inductive choke, a filament lamp of suitable characteristics being satisfactory for this purpose. This type of control is known as filament or tungsten ballast, and fittings incorporating both fluorescent and filament lamps are available. Against the advantages of saving in cost and weight of the complete fitting, instant starting and elimination of choke hum, must be set the lower efficiency of the combination (approximately 20 lumens per watt as compared with 30-35 lumens per watt with chokes as ballast).

Maintenance and Service

Immediately a lighting installation is put into service its performance begins to deteriorate and allowance must be made for this from the start. Fittings should be used which do not provide unnecessary lodgements for dirt, which can easily be cleaned without damage, and which permit of easy lamp changing.

When designing an installation, a "maintenance factor", $\frac{Es}{Ei}$, is applied, where Es is the illumination after depreciation, and Ei is the designed initial illumination. With ordinary atmospheric conditions it is usual to allow a maintenance factor of 0·8, which is based on the assumption that lamps and fittings will be cleaned regularly: in very dirty industrial interiors it may be as low as 0·5. The latter figure may also apply to indirect fittings and features unless particular attention is paid to cleaning.

Performance of Lighting Fittings

Table 1 gives particulars of the performance of a range of typical light fittings, the wattage values given including corrections for room dimensions and average reflection factors of 70% for ceiling and 40% for the walls (see L.1). It is important to realise that these wattages are required to give the same illumination in each case, *not* the same appearance of lighting: they should be increased when the room is small or the window area large and unscreened by light blinds or curtains. The table will give a fair basis for preliminary estimates with different types of lighting: closer figures will be prepared by the lighting engineer using the standard tables of data.

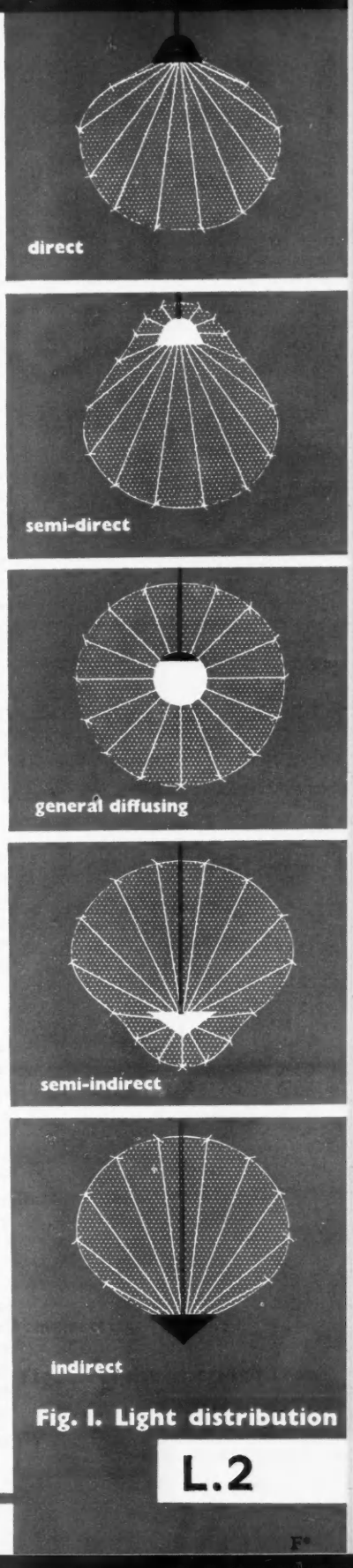


Fig. 1. Light distribution

TABLE 1 LIGHTING FITTINGS TYPES AND PERFORMANCE

	Lamps used	Approx. lamp wattages per 100 sq ft of room area to give 1 lm sq ft in service			Remarks
		A*	B*	C*	
direct	Filament	26	20	17	*Spacing-height ratio 1·5 : 1 (max.). Normal shielding angle 20°. No provision for diffusion. Tend to give hard shadows and produce bright highlights on polished surfaces. Easily cleaned.*
Dispersive Reflector	Mercury Discharge	11	9	8	
Deep Bowl Reflector	Filament	29	23	19	
Diffusing Reflector	Filament	31	23	19	*Gives small amount of upward light. Diffuser round lamp reduces shadows and softens highlights.*
Trough Reflector	Fluorescent	8	6·5	5·5	*Open top or translucent reflectors are made and recommended for most purposes. Can be used in continuous lines or with closed tops tight against ceiling.*
semi-direct	Filament	32	23	21	*Shades should have white interiors.*
Translucent or open top shades					
Enclosed	Filament	34	24	20	*Should be sealed against dust, otherwise difficult to keep clean.*
Batten or V-channel	Fluorescent	9	7·25	5·5	*Satisfactory only with light coloured decoration. Can be glaring at low mounting heights, and lose efficiency as mounting height increases.*
general diffusing	Filament	35	25	20	*Not dust-tight unless properly sealed. Better for small than large interiors. Danger of glare when used in large numbers. Tend to cause distraction.*
Enclosed Flashed opal glass					
semi-indirect	Filament	40	30	25	*These types of fitting need frequent cleaning. Careful adjustment of position of lamp and mounting height necessary to avoid noticeable shadow line on walls. For use where efficiency is a secondary consideration.*
Translucent Inverted bowls	Fluorescent	13	10	8	
indirect	Filament	53	33	27	*Fittings must be easily accessible as both lamps and fittings need frequent cleaning. Careful adjustment of mounting height necessary to avoid shadow lines and dark areas on ceiling and walls.*
Cornices, coffers and other similar "architectural" treatments	Filament	95	56	48	*Careful design necessary to release the maximum light : no more shielding should be provided than is essential to avoid direct view of lamps. All corners should be gently rounded. In particular, lamps need very frequent cleaning.*
	Fluorescent	32	19	16	

NOTES *A = Room having width equal to height.
*B = Room having width equal to twice the height.
*C = Room having width equal to four times the height.

The wattages given for fluorescent lamps are based on "Natural" shade lamps.

L.2 British Electrical Development Association

For further details apply to the British Electrical Development Association, 2 Savoy Hill, London, W.C.2. Temple Bar 9434

on social purposes.

It would not be long before they would find that in housing both municipal and private individuals would be in difficulty because of the speed with which materials were being delivered and partly because of the cost at which things were made.

School Building Proposals

DETAILS of the Government's proposals for school building were announced by SIR DAVID ECCLES, the Minister of Education, when he concluded the first day's debate of the new session, on November 30.

Everyone, he said, told him to withdraw Circular 245, whose single purpose was to direct all available building resources to those places where it was physically impossible to fit the extra children into existing schools: for example on housing estates where it was a case of a new school or no education at all.

The battle against sheer numbers was being won, and they could now pay attention to the schools that were unsatisfactory when the Act was passed. His predecessor had refused to be diverted from the most urgent task of providing new places to match the rising number of school children.

Putting their claim first meant that very few new schools were allowed to be built in the rural areas, where the population was either stationary, or if there was some rise in numbers, the extra children could be squeezed into the existing schools. They had reached the position in parts of the countryside where families were moving out of the villages into the towns simply and solely because they wanted their children to be near a new school. This movement had to be stopped, and the balance against the rural areas reversed.

This was one result of Circular 245 which had to be considered when deciding where to employ such additional building resources which were now available. Nevertheless the moment they were able to pay attention to the quality of our schools as well as to their numbers there cried out for action in town and country all the bad old buildings, the oversized classes and the unreorganised schools. All were unworthy of England and Wales and they had to be removed.

Together these added up to a formidable total—far more than could be tackled efficiently at once. A choice had to be made of where the attack should begin. Reorganisation was the first duty, and the first instalment he proposed was the complete reorganisation of the schools in rural areas. He would request county authorities to carry out reorganisation as fast as they could consistent with efficient and economic building. When they are ready to build a new school for this purpose they could now let the contract. He would ask each county authority to see that the last school needed for complete reorganisation is started before January 1, 1960. Details of this freedom to get on with the job will be given in a new Circular [see page 946].

The architects and other professional staff of the county councils would be severely tested. But we must aim high. We must refuse to contemplate in advance delays and difficulties which cannot be overcome in five years. In future it will be the Ministry who asks the counties why they could not do more; he was sure they would both enjoy the reversal of their traditional rôles.

The new circular would also contain proposals designed to assist reorganisation everywhere. One important change relates to minor works and applies to all authorities. The present limits are £7,500 a job, and an annual total or ceiling of what can be spent on all such jobs.

From now onwards every authority will be free to do as much as it is able to do on minor works; the limits would be abolished and the limit a job would be raised to £10,000. This new freedom should greatly help the reconditioning and improvement of the bad old schools in the countryside and in the towns. Playing fields were mentioned in the Queen's speech. At present only new schools could lay out a playing field. This had been hard on cities like Nottingham and Stoke-on-Trent where the land was ready to be developed as playing fields for the schools in the centre of the town. This restriction would now be removed and he would approve playing fields for existing as well as new schools.

The greater opportunities would apply equally to voluntary schools. Much voluntary school building was already in progress, and the House would realise that to complete reorganisation in the rural areas and to make full use of the new freedom to do all minor works up to £10,000 would call for a big effort from the denominations, not least from the Church of England which has so many aided schools in the countryside. He proposed to offer the Churches all possible help within the settlement which Parliament has agreed.

The restriction in Circular 245 relating to village halls would go and, subject to some problems of definition, which will be dealt with in the new circular, they had decided to reopen their lists for applications from voluntary bodies who want a grant towards the cost of providing a hall or centre. They were offering these grants because they thought that the life of a community was not complete without somewhere to meet and make friends and to carry on the social activities of a neighbourhood.

NEW TOWNS BILL

On December 1, the Minister of Housing and Local Government, MR. DUNCAN SANDYS, introduced the New Towns Bill, which was read a first time. It will come before the House for second reading today, December 10.

This is a one-clause measure to increase by £100m. the aggregate amount of advances which may be made under the New Towns Acts of 1946, 1952 and 1953 to development corporations to enable them to defray the expenditure chargeable to capital account, including the provision of working capital.

Under the 1946 Act the provision was £50m. for that purpose; it was successively increased to £100m. by the 1952 Act and to £150m. by the 1953 Act. The new proposal means that the aggregate will now be £250m.

Expenditure amounting to £141m. has been approved, mainly for housing, and it is expected that the total will reach £150m. soon. Because many schemes for which approval has been given will not be completed for some time, the amount actually issued is only about £97m.

The increase in the amount for which the Bill provided would be sufficient to meet new commitments undertaken over a period of at least two years judged on the basis of the present rate of progress.

THE NEW PLANNING ACT

On December 6, MR. J. ENOCH POWELL asked the Minister of Housing and Local Government whether he could make any statement about the date when the Town and Country Planning Act, 1954, would come into operation.

MR. DUNCAN SANDYS, in a written reply, said: I have made an order appointing January 1, 1955, as the date of commencement of the Act for all purposes. I have also made, and have laid before Parliament today, regulations governing the procedure for applying to the Central Land Board for payments under Part I of the Act and for claiming from the Minister compensation in respect of planning decisions.

REPAIRS AND RENTS ACT

Mr. Duncan Sandys' View

MR. DUNCAN SANDYS, Minister of Housing and Local Government, speaking in London on December 2 on the Housing Repairs and Rents Act said: "I feel entirely confident that it will work and will achieve its purpose." Mr. Sandys was speaking to members of the Chartered Auctioneers and Estate Agents' Institute, and he gave three reasons for his confidence. He said:—

The first is that it brings house-owners face to face with the problem of what they are going to do with their property; they have the choice of preserving it as a continuing asset or, through short-sighted parsimony, of allowing it to decay and dwindle in value. My second reason is that the Act not only exhorts owners to keep their properties in good repair, but gives them the means and incentive to do so. Thirdly, I believe that as the months go by, and repairs and improvements are carried out, the tenant will welcome these better conditions and will not grudge having to pay for them.

Lastly, the Act provides a clear warning of the inevitable consequence of continued neglect leading through disrepair and decay, to eventual compulsory demolition.

I have noticed that there are already people going about saying that the Repairs and Rents Act is proving a dead letter. All I would say is that it seems a little soon to pass judgment after only four months. The Act is intended to help preserve literally millions of houses of different ages, sizes and conditions all over the country. Who on earth could expect that a problem of this magnitude could be solved in so little time? It will take years to measure its full success, though I believe that in the next 12 months it will already be showing appreciable results.

In this connection I should like to emphasise the important part which can be played by professional men like yourselves, whose business it is to advise owners of property how to avail themselves of the opportunities offered by the Act.

The members of your Institute can do much to explain the position to their clients and encourage them to do what is in their own interests as well as in the interests of the community.

One thing I would like to see would be more use made of those provisions in the Act which are designed to help owners to improve and convert the older types of property. The Act has made several important changes, which widen the range of property for which grants can be made. In particular, I hope you will help draw attention to the new provisions which exempt from rent control properties converted without grant.

If owners fail to take full advantage of the opportunties offered by the Act, their property will continue to decay, thereby creating an increasing slum problem for the community, and a wasting asset for themselves.

2 Savoy Hill, London, W.C.2. Temple Bar 9434

THE FUTURE OF WOOD-WORKING CRAFTSMEN

Varied Views at IBICC Meeting

A DISCUSSION on the future of the woodworking craftsman attracted a large audience to the RIBA building in Portland-place, London, W1, recently. The meeting was arranged by the Incorporated British Institute of Certified Carpenters and Mr. M. T. Telling took the chair.

MAJOR A. B. WATERS, FRIBA, asked what sort of opportunity was the carpenter to have, what service could he render to the community in future? One heard that there was a lack of opportunities for good craftsmen. It was also said that there were no good craftsmen. But any woodworking craftsman could be justly proud of the work of his fellows, and there were still opportunities for carpenters; because every building had to have doors, windows and fitments of every kind. Building in reinforced concrete required shuttering. So also with plastics, the skill of the carpenter was required to fix the work and get it right. It was not true to say there were no opportunities for craftsmen, it was more nearly true to say that there were not the craftsmen who could do good work; but he had never failed to get a difficult job done, and done well.

MR. A. S. CHARLTON (a builder) said that woodworking craftsmen were employed on house building, ship building and all sorts of things. Looking at the matter from the builder's point of view we saw large contractors putting up big buildings with a minimum of woodworking. We saw also an army of expert craftsmen fashioning and bringing back into use types of woodwork already existing. This was done by hand: it would not pay to use machinery. The skill of the woodworking craftsman was passed on from father to son and from master to apprentice. To-day, as the result of two world wars, technique had been changed by the introduction of mechanisation; but although this was an age of mechanisation and new technique it did not follow that we should let craft or craftsmanship die. Youngsters must be taught that there was something in the love of craft. Builders who took apprentices should see that they were well trained. The national apprenticeship scheme was a fine one. Builders must see that work was well and truly carried out by skilled craftsmen, and craftsmen must show that they could do skilled work.

MR. N. W. KAY said that to ask what sort of craftsmen there would be in the future was to ask what sort of society would then exist. The development of atomic power would alter the present fact that the carpenter played a major part in erecting a house. It had long been the case that all the skills necessary in house building could not be possessed by any one man, and to-day the craftsman was replaced by an association and many men were employed to bring the product to its complete form. It was a long step from the village carpenter to the complex methods of modern production. In the future improvements must be expected in the quick seasoning of wood, in glues, synthetic resins, plywood, and so on. We should look forward to shorter hours, better working conditions, and a much greater use of mechanical tools.

In a lively discussion which followed, MR. NORMAN KEEP (Willesden Technical College) said, as to the recruitment of carpenters and joiners, there were 250 people in the classes in his college, but the work the lads were being trained for was not being done. One apprentice complained that he had been kept for two years on shuttering, another that he had been employed for three years on housing schemes. Neither had had any opportunity of doing the work he had been trained for.

DEMAND FOR FINE WORK

Among other points raised in the discussion that followed was one that with the cost of production rising the demand for fine work would die out. Other points were that the woodworker was being pushed out by machinery, and that the present generation of craftsmen did not see the importance of doing good work.

A complaint of lack of intelligence from one speaker was answered by a statement that this was due to apprentices being subjected to specialisation. This speaker said that one apprentice had spent five years on show cases and others years on shuttering. How could they get an all-round knowledge? The Apprentices Council should arrange for apprentices who went to specialist firms to be transferred from one firm to another so as to get an all-round insight into the trade. The City and Guilds certificate being recognised by employers by an extra wage would give apprentices something to work for.

Another speaker asked whether the example of the big engineering firms could not be copied. A lad with one of these firms went into the moulding shop, the machine shop, the drawing office, the pattern makers, and so on, and finally made his choice as to the department in which he wished to work.

A vote of thanks was passed to Messrs. Waters, Charlton and Kay.

PAINTS IN HOUSING

Housing Centre Talk

A TALK was given at the Housing Centre, London, on November 16 by MR. L. R. HICKSON, director and chief chemist of Hadfield's (Merton), Ltd., on "The Use of Paints for Housing Work."

Speaking first about the natures of paint to-day, Mr. Hickson observed that many people often said that no paint to-day was as good as the white lead paint which had been so commonly used before the war. It was not that the white lead paint had deteriorated, but that the circumstances in which it was used had changed. White lead paint was very good as an external paint, provided you did not expect too much in the form of decoration. But it flaked quickly and its colours would not remain bright for long. White lead-based paints were to-day by far the best for priming of wood in the open, and even for some undercoat work.

Between the wars there was an era of hard gloss paint. There were limitations to this kind of paint, however. It was the linseed oil in it which gave it durability for outside application, but the resin in it lowered that quality. Gloss paints for outside work were generally only reasonably quick-drying, but a quicker drying gloss paint could be used for inside work. Gloss paints were still very much in use, but from about 1937 onwards and during the post-war period, so-called synthetic or alkid finishes began to be used. Alkid varnishes, quick-drying and durable, were also evolved, as well as new water paints, such as distempers, which were oil-bound and washable.

The post-war types of water paint, termed emulsion paint, had a base of polyvinyl acetate emulsion (a synthetic resin). It was possible to have paints in some colours which did not fade at all. Some strong paints lost their colour, but this was not necessarily fading. For example, chrome yellow would darken with the effect of light, but other pigments would not. To-day, titanium oxide was the main white in the base of paints.

Paints varied in the extent to which they would retain dirt picked up from the atmosphere. On the whole, the more modern paints would not retain dirt to the same extent as did the more old-fashioned white lead paints. It was the sulphur-dioxide in the atmosphere which was the greatest destroyer of colour in paint. Contaminating atmospheres also extended indoors, such as in kitchens with gas cookers not vented to the outside air. Gas convector heaters produced sulphur-dioxide by combustion, and electric ones by stirring up the air so that there was a greater chance of reactive agents in the air being brought into contact with the paint.

One of the most common difficult surfaces which should be treated with paint was highly absorbent building board. It was difficult to apply paint to this material with a brush, although a brush should be used on this surface. It was possible to make paints which would be satisfactory for this type of surface, but would not be absorbed by it. It was also possible to provide a priming paint which would deal satisfactorily with two surfaces, side by side, one of which was an absorbent material and the other resistant to paint. On top of this brushed priming one could apply a spray coat of white glossy paint. Damp surfaces ought not to have paint applied to them, but this was often necessary. The modern emulsion paint was the one least likely to cause trouble in this case. Non-ferrous metals could be successfully painted with a modern zinc chromate etching primer, and the painting of copper, brass and lead no longer presented any difficulties, so long as modern etching primers were used.

HOUSING PROGRESS REPORT

Figures for October

THE HOUSING SUMMARY presented to Parliament as a White Paper* jointly by the Minister of Housing and Local Government and the Secretary of State for Scotland, shows that the number of permanent houses completed in Great Britain during October was 31,518, compared with 30,031 in October, 1953.

In the first ten months of 1954, 287,628 permanent houses were completed compared with 255,894 in the same period of 1953.

* Cmd. 9339 Housing Summary, October 31, 1954. HMSO, price 2d.

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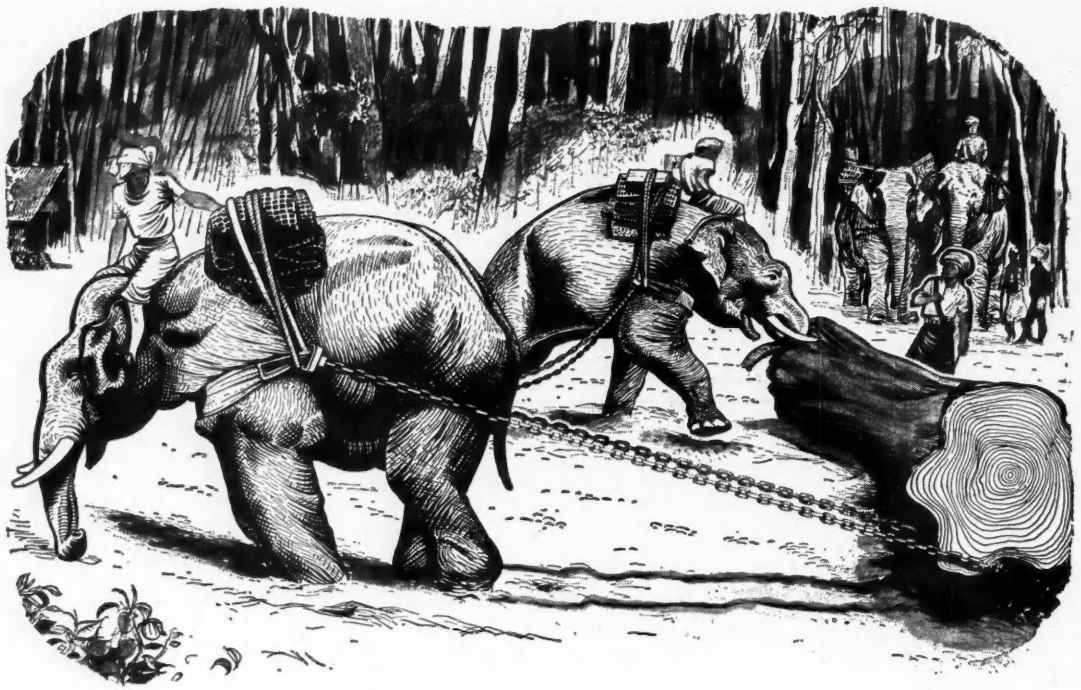

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SAND AND GRAVEL WORKING

Recommendations for East Anglia and the South-East

ALLOCATION of land for sand and gravel working to maintain output at a reasonable cost in Middle and East Anglia and in Kent and East Sussex over the next 50 years without causing serious damage to agriculture or to the landscape is the subject of Parts 11-13 of the Report of the Advisory Committee on Sand and Gravel, now published. (HMSO, price 8s.)

In all three gravel regions the committee have estimated the average annual demand for sand and gravel over the next 50 years but they have recommended that the Ministries of Works and Housing and Local Government should review these estimates regularly.

These estimates total 5.7m. cu. yds. a year; 2.0 from the Middle Anglia workings, 2.5 from those of East Anglia and 1.2 from those of Kent and East Sussex. The acreage needed to meet these demands over the next 50 years is put at a little under 17,000—8,165 acres in Middle Anglia, 5,680 in East Anglia and 3,030 in Kent and East Sussex.

The committee, which was appointed in 1946 to make recommendations on future policy for the control under the Town and Country Planning Acts of the extraction of sand and gravel, have now published two general reports and 12 regional reports. Reports to be published shortly concerns East Lincolnshire, East Yorkshire, Wales and South-West England.

Middle Anglia.—The committee adopted the short descriptive title "Middle Anglia" from the Anglo-Saxon Kingdom which corresponds roughly to the area reviewed (the whole of Bedfordshire, Huntingdonshire, the Soke of Peterborough and the Isle of Ely, together with parts of Cambridgeshire, Northamptonshire, Buckinghamshire, South Lincolnshire, Hertfordshire and Essex).

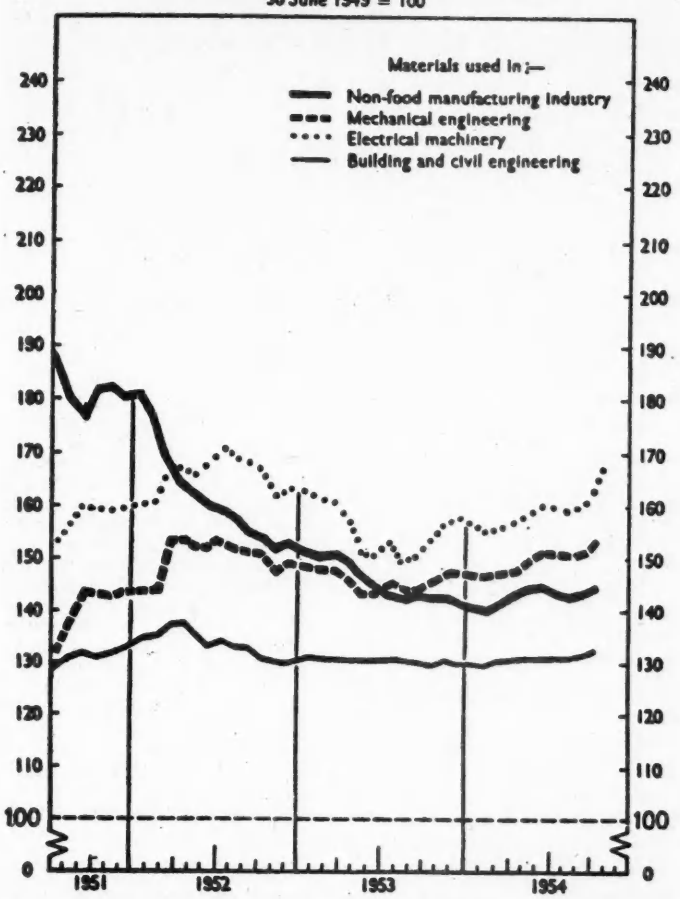
There is much first-class agricultural land in Middle Anglia and large areas were on this account excluded from the committee's consideration. The allocations are generally restricted to land of poorer quality, with the result that in some areas the committee have been unable to indicate sufficient land for 50 years' working; they recommend, however, that the position should be reviewed in about 25 years.

The committee point out that interference with the landscape will be lessened if, after excavation, steps are taken to make the lagoons, which will generally have to remain unfilled due to lack of material, as attractive as possible by the planting of trees and shrubs and by other means.

East Anglia.—East Anglia includes Norfolk, East and West Suffolk, a large part of Essex and adjoining areas of Hertfordshire and Cambridgeshire. In this region the committee have been able to allocate sufficient land for 50 years' working without serious damage to agriculture or to the landscape.

Kent and East Sussex.—The Kent and East Sussex Region covers the whole of those counties except for the Metropolitan area of Kent. There is a scarcity of gravel deposits in the region and material is already imported from neighbouring gravel regions. The main gravel reserve of the region lies in the vast shingle deposits at Dungeness and Camber, but the committee have restricted their allocations there to exclude an area which is of special scientific interest to ornithologists, natural historians and physiographers, and another area at present used by the War Department has also been excluded. The committee recognise, however, that further land will have to be worked here in order to maintain production for 50 years, and they recommend that before the present allocations are exhausted, consultations should be held between the parties concerned with a view to agreeing further allocations.

INDEX NUMBERS OF WHOLESALE PRICES
30 June 1949 = 100



BUILDING MATERIALS PRICES.—The above diagram, reproduced from the Government publication "Economic Trends," shows the relationship between the price indices of building and civil engineering materials and the materials used in three other industries, viz., non-food manufacturing industry, mechanical engineering industry, and electrical machinery industry. Commenting on the graph "BMP Weekly Information" of December 3 states: "It will be seen that the price index of building and civil engineering materials remains both substantially lower and substantially more stable than the indices of the other groups. Both these facts are worth remembering—there can be few industries whose materials price index has remained so consistently stable and comparatively low for so long a period, despite increases in cost of labour, fuel, power, transport and imported materials."

LARGE DAMS

International Commission to Meet

THE Fifth Congress of the International Commission on Large Dams of the World Power Conference will open in Paris on May 31, next year.

Papers to be presented by the British National Committee will include subjects under the headings: Design and Construction of Dams on Permeable Soils and Methods of Foundation Treatment; Economics and Safety of Different Types of Concrete Dams; Settlement of Dams due to Compressibility of the Dams' Materials or of the Foundation Soil, including Earthquake Problems; and The Relation of the Cement Content of the Concrete to Performance in Practice of Gravity, Arch and Buttress Dams and its Influence on Permeability and Frost Resistance.

Copies of Bulletin No. 1, issued by the French National Committee, are still available and may be obtained from: The Secretary, British National Committee on Large Dams, 201, Grand Buildings, Trafalgar-square, London, WC2. This Bulletin contains the programme and time-table of the Congress proper and other information.

SUBSIDISED HOUSING

"To Each According to His Needs"

ADDRESSING a meeting of the South Wales and Monmouthshire Regional Committee of the National Housing and Town Planning Council at the Guildhall, Swansea, on November 30, MR. A. R. KERRELL-VAUGHAN, general secretary of the council, said: "Municipal housing is attaining formidable proportions. When municipal housing was introduced the object was to help provide houses for people who could not afford to pay a normal rent. We have progressed a long way since then, perhaps to the stage where we have lost sight of that primary purpose. Since 1949 we have had a housing code which enables local authorities to provide houses for all or any families able to justify their need of accommodation.

"Every family has the natural right to a separate dwelling place of their own, but it was surely never intended that houses should be provided largely at the expense of the other citizens for people who can afford a reasonable rent. In all other spheres there has to be a provable claim to have one's income augmented out of public funds. The principle transcends politics, it is governed by the simple Christian and social doctrine 'To each according to his needs.'

"Failure prudently to dispense the financial assistance can result in little being done to alleviate the needs of the badly housed people of slender means. It may well be that the pressure of the interests of the taxpayers may ultimately force the Government to regulate the way in which subsidies are distributed, which would have the effect of taking away the freedom which local authorities have long enjoyed in the management of their houses."

BRITAIN'S ROADS

Booklet Lists Construction Requirements

THE LOW RATE of road expenditure permitted by the Government in Britain compared with other countries is underlined in the pages of a booklet being distributed by the British Road Federation, 4a Bloomsbury-square, WC1. Entitled "Modern Roads for Britain—How to Get Them," the booklet is a collated edition of four publications issued this year by the Federation, as a special survey. It suggests that work on modernising the country's road system could be put in hand without delay by means of road loans, and outlines a procedure for administering such loans.

Of particular interest are the requirements of labour and materials listed as necessary for a comprehensive programme of new road construction. It is estimated that such a programme would need a labour force, over and above the present numbers employed on roadworks, of 25,000 men for 10 years. This figure is said to be remarkably small in relation to the task, owing to major developments in the use of machinery during the last 20 years. Road building has ceased to be the last field of employment for unskilled workers in times of depression, and is now the concern of highly skilled specialists.

The materials required for a comprehensive road programme, it is stated, do not call for any expenditure on foreign exchange. They comprise stone from British quarries, cement, steel, asphalt, bitumen, tar and coated macadam, all home produced. Even a major project, such as the Severn Bridge, would require only about 50,000 tons of steel and 130,000 tons of cement. On average, modern motorway construction needs 450 tons of steel, 2,800 tons of cement, 19,000 tons of stone and aggregate, 7,500 tons of sand and 100 tons of tar or bitumen per mile.

A road programme of the scale needed would require annually the following approximate additional quantities of materials: stone and aggregate, 7,000,000 tons; steel, 70,000 tons; cement, 425,000 tons; tar or bitumen, 150,000 tons; and sand, 900,000 tons. These quantities exclude those mentioned in respect of the Severn Bridge project. It would also be possible, if necessary, to replace a great part of the cement by additional quantities of stone and aggregate, and tar or bitumen, although it is assumed that by the time road construction on any major scale commences, adequate supplies of cement would be available, having regard to the expansion which is taking place within the industry.

Methods of highway finance used overseas, together with road-building achievements in various parts of the world, are listed in the booklet, copies of which can be obtained from the Federation at 4a Bloomsbury-square, WC1.

LIGHTING & ELECTRICITY

Presidential Address on Supply Problems

AT THE OPENING meeting of the new session of the Illuminating Engineering Society at the Royal Institution, Albemarle-street, W1, recently, MR. E. C. LENNOX was inducted as president. The theme of Mr. Lennox's address was the importance of lighting to the electricity supply industry. Mr. Lennox first dealt with the historical development of lighting.

The application of electricity for lighting had grown rapidly, Mr. Lennox pointed out. In just over half a century it had taken over all but a small part of the lighting field. During this period the cost of light had steadily fallen. In 1893 one penny purchased 440 lumen-hours, in 1954 it purchased 23,000 lumen-hours. This was the result of the efforts of both the electric lamp manufacturers and the electricity supply industry. Progress in utilisation, however, had been slower. There was a great need for a revival of the energy displayed pre-war in bringing the advantages of better lighting to the notice of consumers.

Mr. Lennox said that the most urgent problem facing the electricity supply industry today is the same as that 60 years ago, namely the improvement of load factor. Expensive plant must be used to the full; there would be no question of limiting peak demand and the valleys in the national load curve must be filled in. Advances in lamp efficiencies and lighting techniques lead to higher consumption and the gap between existing conditions and desirable lighting standards is great.

The Leon Gaster Memorial Premium of the Illuminating Engineering Society has been awarded this year to Mr. J. M. Waldram, for his paper entitled "Studies in Interior Lighting." Mr. Waldram is with the Research Laboratories of the General Electric Co., Ltd.,

The IES Silver Jubilee Commemoration Award has been awarded to Mr. J. Lynes for a paper entitled "A Method of Designing Symmetrical Specular Reflectors for Small Light Sources." Mr. Lynes is with Falk, Stadelmann and Co., Ltd.

BOOK

HOUSES OF TO-DAY. By Colin Penn, ARIBA. (London: B. T. Batsford, Ltd.) Price 30s. net.

Now that licensing is abolished the thoughts of many who are able to command the finance must be turning to the idea of building a house to their own requirements. Those who need advice on the subject will find that Mr. Colin Penn has here got together an excellent collection of small houses and bungalows erected since the war. There are 116 illustrations, including many beautifully reproduced photographs of exteriors and interiors, as well as details and plans. All the dwellings shown are, naturally, on the small side, most having the popular living-dining-space with kitchen adjacent and either two, three or four bedrooms. Around these examples Mr. Penn has written eight chapters giving up-to-date information and advice on every aspect of the subject, including particulars of architects' services and fees. This is an excellent book for anyone contemplating the adventure of housebuilding.

G. J. H.

BRITISH STANDARDS

Reinforced Concrete Structural Members

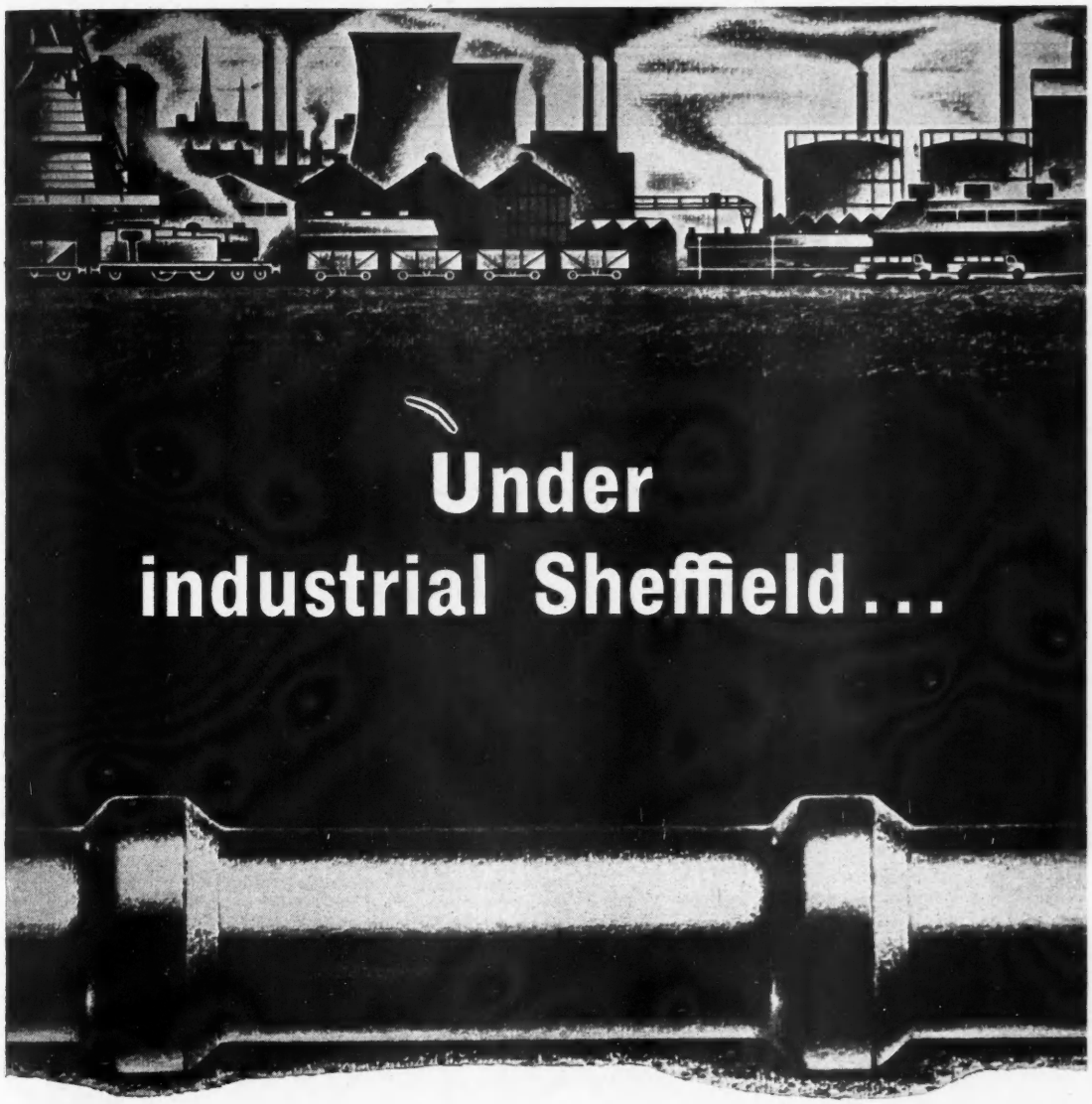
BS 2539, recently issued by the British Standards Institution, specifies the preferred dimensions of shuttered faces of reinforced concrete structural members, excluding light precast members. It has been based on a report on the subject published by the Reinforced Concrete Association in March, 1946.

A standard range of preferred sizes for cross-sectional dimensions is given for adoption wherever practicable. Preferred dimensions for individual structural members are given for use where it is impracticable to use the standard range of dimensions. Particularly in large building schemes where much repetition occurs, it has been shown that the key to lower formwork costs lies in the standardisation of formwork sizes. The recommendations in this standard are, therefore, specifically limited to the dimensions of shuttered faces of structural members since an essential preliminary to the standardisation of formwork sizes is the standardisation of these dimensions. It may not be possible entirely to eliminate specially-made items of formwork but it is hoped that their use may be reduced to a minimum.

Copies of this British Standard may be obtained from the British Standards Institution, 2, Park-street, London, W1, Price 2s.

WALSALL BUILDERS' DINNER

Formed 18 months ago and now with a membership of 80 builders, the Walsall branch of the Federation of Master Builders organised its first annual dinner on December 1. Mr. H. J. Price, president of the Federation's Midland Region, responding to the toast of "The Federation," said that the Federation realised it had a duty to its members, who, in turn, had a duty towards the public. The Federation was growing year by year, Mr. Price added, and in the Midland region the past year was probably the most successful. They had "stood on their own feet" for the first time and had even sent a donation to London.



Under industrial Sheffield...

Those pipes are part of the Tinsley Sewerage Scheme. They are foul sewers and vary in diameter from 36″ to 15″. They run under a busy, industrial district of Sheffield : under two main line railways, under a canal, and under roads that carry very heavy traffic.

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CHURCH HEATING

A FURTHER article in the series on Church Heating, prepared by a committee of architects and heating engineers on behalf of the Central Council for the Care of Churches, is published below. After their appearance in "The Builder," the articles are to be published in booklet form.—ED.

5—*Alternative Systems for Heating (continued)*

(B) *Low Pressure Hot Water Systems*

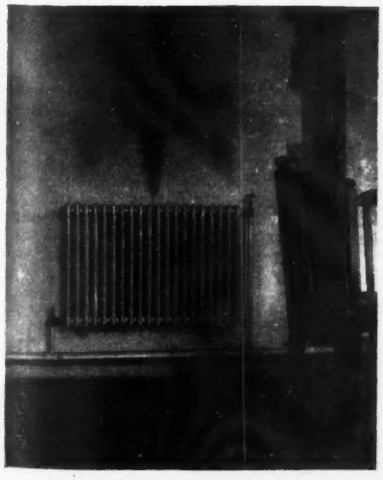
HEATING systems which employ low pressure hot water as the heating medium (i.e., systems which are supplied with water through a ball valve in an open-topped tank or a tank fitted with a loose cover) are generally somewhat expensive to install, but for continuous or semi-continuous use can be arranged to operate with the lowest running cost depending upon the fuel consumed. Hence this type of system should be considered primarily for churches in which at least one daily service is held and for churches which, by virtue of their size, cannot be heated for the duration of occasional services, and which cannot be heated economically by other means. Low pressure hot water systems should also be considered for churches which require heating on Sundays only—with possibly one or two additional days during the week—in areas in which exposure to severe freezing conditions does not exist.

Low pressure hot water systems should generally not be used in the following types of church:

(1) Churches in positions exposed to severe freezing conditions.

(2) Churches in which the installation of pipes and radiators would cause unforgivable disfigurement, and in which the reconstruction of the floor for the laying of underfloor heating coils is out of the question.

(3) Churches in which there are no boiler houses, and which are so surrounded by other buildings that the erection of boiler houses is impracticable or where a boiler house would seriously detract from the amenity of the building.



The effects of a radiator on a wall surface where no deflector shield has been provided. The example is from the Chapter House of Chelmsford Cathedral.

The description "Low Pressure Hot Water" is not confined to the type of installation comprising a coke fired cast iron sectional boiler, cast iron radiators and circulating pipework, as is commonly supposed. It embraces a wide range of equipment in which there are the following units which may be employed in various combinations according to the requirements of the church and of the locality, and according to the dictates of fuel and labour availability and price.

THE HEATING SURFACE

(1) *Cast-iron pipework with socket and spigot jointing.*—It was formerly usual to instal the pipework in underfloor ducts beneath the aisles and to cover them with cast-iron gratings. This practice was not only very unhygienic but the noise created by persons walking over the gratings was most disturbing.

Where pipes must, of necessity, be installed in underfloor ducts, the ducts should either be of sufficient size for a man to crawl along them from occasional removable covers, or, alternatively, the ducts should have removable tray covers filled with a similar material to the surrounding floor finish.

The popularity once enjoyed by this class of pipework no longer exists. Where it is found already installed in underfloor ducts, with open type gratings over, it should not be renewed when out-worn. It was also used for the distribution of hot water between the boiler and the various heating circuits.

(2) *Mild steel pipework.*—In practically all new installations mild steel pipework which is less costly and not so cumbersome as cast iron is adopted for the circulation of hot water and for heat emission — particularly at high level under clerestory windows and triforia, or at roof plate level.

(3) *Sectional radiators.*—The majority of the heating surface is in the form of sectional radiators which are available in a wide variety of sizes and types. It is desirable that regulating valves be provided on all radiators for the control of heat emission and that where they tend to blacken the walls above they should be provided with deflecting shields. These can be of shelves, substantially constructed to prevent damage. A good material is slate or hard stone.

(4) *Exposed radiant panels.*—These consist of flat metal plates with waterways concealed at the back, and are used in positions in which radiators would be objectionable. They are more expensive than radiators.

(5) *Convector heaters.*—The "natural" convector heater consists of a grilled hot-water battery concealed behind a sheet metal casing. Air enters through a grille at the bottom, and, after passing over the battery and being heated, is discharged through a grille near the top. The convector heater is occasionally used in positions in which radiators would be unsightly.

(6) *Forced convection heaters.*—These differ from the "natural" convector heater only by the addition of an electrically driven fan unit which blows a current of air over the hot-water battery thus considerably increasing the emission of heat. By this means a large space may be warmed by a few heaters. It is essential to ensure that any electrically driven fans installed in a church are silent in operation.

(7) *Embedded Panels.*—This is a system using coils of pipes, usually of ½ in. internal diameter, embedded in the floor, walls or ceiling, or a combination of these positions. In churches it is usually desirable to embed the pipes only in the floor. This system is suitable for new churches or those in which a new floor can be laid without interfering with ancient floor slabs or intermural burials.

This system has the advantage that there are no exposed pipes or radiators although it may need to be augmented by some form of heating surface beneath large windows to counteract down draught.

As the normal sytem of embedded pipe panels operates with a waterflow temperature of 100-120 deg. F. it is not practicable to supply radiators off the same circuit because they need higher temperatures. This, however, can be overcome by clipping ½ in. thick sleeves of asbestos cement around the embedded pipework whereby radiators and

Embedded panels being installed in Paignton Parish Church.

underfloor panels may be supplied with water having a temperature of 180 deg. F. When an appreciable number of radiators is to be combined with this system, this device may reduce the initial cost by the elimination of separate water circuits operating at different temperatures.

The pipes should be laid on a 2-in. thickness of insulating material, such as aerated or vermiculite concrete and covered with a screed of cement and sand on top of which a wide variety of floor finishes may be laid, including certain types of wood block bedded in high softening point mastic or other suitable adhesive, wood strip flooring laid without an air-space beneath, cork tiles, composition blocks, quarry tiles, thermoplastic tiles, terrazzo, stone slab, etc.

This system also requires to be accelerated by some form of mechanical circulation.

All heating surfaces should be so designed that disfigurement of the church and its contents is avoided. The position and size of each radiator and pipe should be marked out and agreed on the plan submitted to the Diocesan Advisory Committee and a Faculty obtained before any equipment is ordered.

Radiators should be placed in positions where the warm upward current of air from them does not (a) blacken any adjacent wall, memorial tablet, mural painting, etc., and (b) produce a corresponding downward current of cold air in the seating area. Either radiators or pipe coils should be provided beneath large windows, such as the main east and west windows in most churches, and in such positions where down draught from clerestory windows is present. Where galleries exist, even if they are not used, sufficient heating surface must be provided above the gallery level to counteract the loss of heat from windows and walls above that level. It is essential also to provide a liberal amount of heating surface close to entrances as cold draughts in adjoining doorways are a constant source of complaint.

It must be remembered that long lengths of pipework will expand when filled with hot water and consequently the brackets and connections to the pipework must be so designed as to allow it to expand and contract freely.

It is essential that means should be provided for the removal of air from all high points of the pipe system and for draining off water from the whole, including all low points.

For intermittent heating it is particularly essential that the boiler has an adequate margin above the building heat loss in order that the temperature required in the church may be obtained in a reasonable time.

All boilers should be fitted with the following appliances which must be adequately maintained and replaced whenever necessary:—

A thermometer.
An altitude gauge.
A safety valve.
An automatic damper regulator on hand-fired boilers.
A damper and operating rod.
An open vent pipe.
A drain cock.

THE BOILER

(1) *Cast iron sectional boilers.* The majority of churches possessing low pressure hot water heating systems have boilers of this type. Whilst they can be supplied for either hand firing with coke or for mechanical stoking with coal, it is not always practicable to fit a mechanical stoker subsequently to a cast iron boiler designed for hand firing as certain makes of boiler have fixed firebars which make this conversion impracticable.

(2) *Mild steel boilers.* There is a wide variety of mild steel boilers available. As each type is generally suitable for a particular application it is impracticable to give full details in a document of this nature. The cost of steel boilers is generally higher than the cost of cast iron boilers, and their installation should, therefore, be regarded as necessary only on competent advice.

(3) *Gas fired boilers.* These boilers are of a special design and are unsuitable for any other type of fuel. Their efficiency is high—generally in the region of 80 per cent. —with the result that if low boiler temperatures about 100-120 deg. F. are adequate during mild periods, condensation of flue gases on the boiler may occur. As mild steel boilers are more prone to corrosion attack than cast iron boilers, only mild steel boilers specially treated to resist corrosion should be used. Gas fired boilers can be made fully automatic by the installation of a clock control. The provision of devices to shut off the gas supply in the event of the burners not lighting, or of the flame going out, are essential.

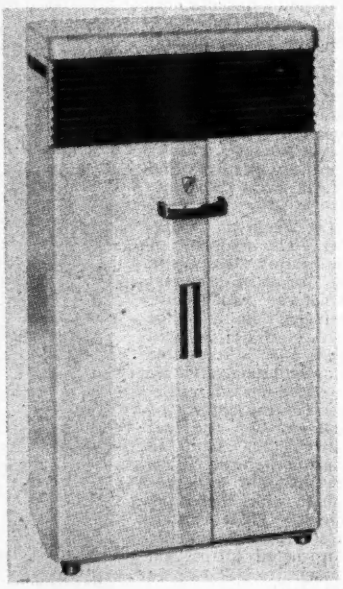
Adequate ventilation of the boiler house is essential, and the flue should be lined with salt-glazed tiles or some similar non-absorbent material which is acid-resistant.

ALTERNATIVE FUELS FOR LOW PRESSURE SYSTEMS

(1) *Coke.* For the majority of churches in which a low pressure hot water heating system is installed coke is hand-fired into the boilers; as a result of the scarcity of available labour, however, a large number of clergy are now having to stoke their own boilers—a situation which must be avoided when considering a new installation.

For further information about fuel see Section 9B.

(2) *Coal.* It is not desirable that bituminous coal should be used in hand-fired boilers as most coals of this nature swell and fuse together, thus requiring frequent "breaking up" of the fire bed. Furthermore, the smoke emission gives rise to serious complaints.



A modern convector oil heater. Oil heaters of various types are obtainable, but are more suitable for the smaller rooms associated with the church.

On the other hand coal only should be used in boilers which are fitted with mechanical stokers of the under-feed type. The expense involved in fitting such stokers is seldom justified in churches in which the heating is of a very intermittent nature, but where continuous or semi-continuous heating is required (particularly in cathedrals and very large churches) the use of mechanical stokers may be justified. Such justification is based largely on the grounds of efficiency and economy—a saving in fuel consumption of 10 per cent. may be obtained in addition to a saving in labour in most cases.

(3) *Oil.* Where some form of fully automatic boiler plant is required consideration should be given to the installation of oil firing equipment. Whilst the initial cost is probably in excess of the cost of the principal alternative—gas firing—the running cost in many areas is considerably less.

Almost any type of cast iron sectional boiler may be fitted with an oil burner which can be made to start and stop automatically by means of a clock control or a thermostat. In addition to the burner, accommodation must be found for an oil storage tank which should have a minimum capacity of 500 gallons.

Various grades of oil are available. The heavier grades require more expensive equipment (such as electric heaters in the storage tank and in the burner itself), but the cost of the heavier grades is less than that of the lighter grades. The two lighter grades are the most suitable for use in church heating systems.

(4) *Gas.* It has already been stated that boilers designed solely for gas firing are available. With such boilers it is found as an average that the annual cost of gas is approximately double the annual cost of coke in similar installations having coke fired boilers. After adding the cost of labour to the cost of coke it is found that the average cost of gas is 30-40 per cent. higher. It is explained that these figures are averages over the whole country and are liable to wide variation according to the relative costs in the areas concerned.

In addition to the boilers designed for gas firing it is practicable to burn gas in ordinary cast iron sectional boilers by means of conversion sets. The efficiency of boilers fitted with such sets is lower than the efficiency of boilers designed for gas firing, however, and as the running cost of the latter is already relatively high compared with solid fuel, the use of the conversion sets can only be recommended in exceptional cases.

(5) *Electricity.* The use of electricity as a source of heat for a low pressure hot water heating system is not recommended in view of the high running costs which will result. Electricity is best used in buildings to which it is particularly suited by virtue of its ability to produce radiant heat as well as convected heat, and by virtue of its property of rapid response to control. Installations of this type are described under (D) in this section of this report.

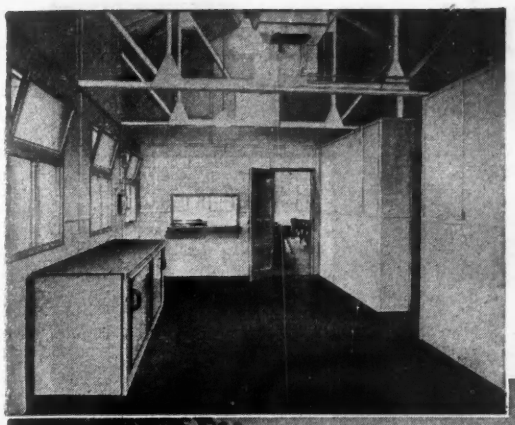
NOTE.—In the case of oil- or gas-fired boilers thermostatic clock control can be provided.

METHODS OF PROVIDING HEAT BY MEANS OF LOW PRESSURE SYSTEMS

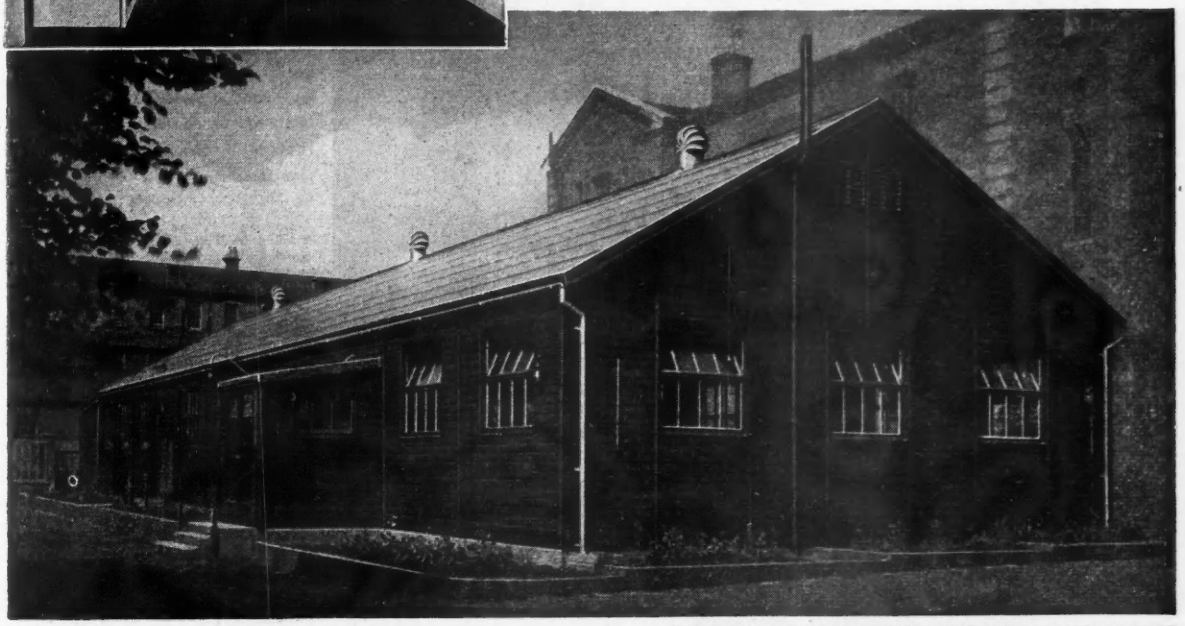
For details of good practice in the installation of hot water heating systems reference should be made to the British Standard Code of Practice C.P.341 (1953) on this subject.

The following are the principal methods of providing heat by means of low pressure hot water systems in churches:—

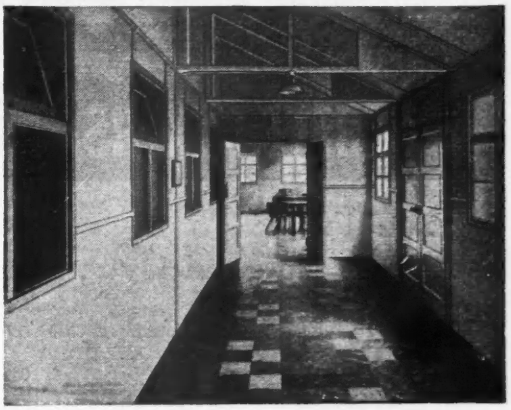
Gravity circulation.—By this is meant



Wide-span timber buildings



For sectional timber buildings consult Hall's. Hall's standard 6 ft. unit can be assembled to any length in spans of 10 ft., 12 ft., 15 ft., 18 ft., 24 ft. and 30 ft. Built throughout of selected, fully seasoned timber (Hall's have their own timber drying kilns) they are widely used as Classrooms, Village Halls, Community Centres, Recreation Rooms, Canteens, Factory extensions, etc. Fully detailed plans supplied against your specification. Illustrated catalogue free on request.



(CENTRE) Nurses' Recreation Room, 30′ span x approx. 100′, for Paddington Hospital, London. Illustration shows how porches or lean-to extensions can be easily arranged. (Photo : courtesy Paddington Hospital Management Committee.)

(INSETS) These show Hall's prefabricated partitions and standard lining to walls and underside of roof. (Photos : courtesy No. 10 Group B. Wakefield Hospital Management Committee.)

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a system in which the circulation of water is by natural convection without the aid of a circulator or pump. Wherever possible this system should be used provided the pipes required are not too large and unsightly. The system requires very careful design to ensure a circulation of water to all parts of the system, even more so during mild weather, with a low temperature at the boiler.

Accelerated circulation.—This is a system which is designed to work partially by natural convection but an electrically operated pump with an automatic by-pass is added to provide full circulation.

With this system smaller pipes can be used than are necessary for a natural convection but care must be taken to ensure that water does not reach the electric motor and other electrical equipment if the boilerhouse is likely to be flooded at any time. (For details of the boiler house see Section (6).

Pumped circulation.—This type of apparatus relies upon the continuous use of a circulating pump whenever heat is required. Great care is necessary in designing this type of installation and steps must be taken to ensure that steam will not be generated in the boiler in the event of stoppage of the circulating pump from any cause. Hand-fired boilers, if with little or no natural convection circulation, are unsuitable for this type of apparatus owing to the large body of fire they contain which tends to generate steam in the boiler if the pump stops. This may apply to a lesser extent with an automatic stoker.

Firing by means of automatic stokers, oil and gas are generally suitable but unless the boiler house can be sunk below the level of the main circulating system steel boilers instead of cast iron should be used. Apparatus combining pumped circulation and automatic stoking is only suitable for cathedrals and large churches and demands daily attention.

Embedded panels.—A development of the pumped circulation system comprises coils or panels of pipes embedded in the floor, walls and ceiling.

(C) *High Pressure or Small Bore Hot Water Systems*

The installation of this method of heating in public buildings was condemned by the Home Office some years ago following several fires and explosions where such systems were in use. It is not recommended for installation in churches and therefore a full description is omitted from this survey. This does not mean, however, that where an existing installation is working satisfactorily it should necessarily be condemned, but it should be subject to regular and expert inspection and testing.

(To be continued)

CHEMISTRY OF CEMENT

The proceedings of the third International Symposium on the Chemistry of Cement, held in London in 1952, have been published in a single volume by the Cement and Concrete Association, 52, Grosvenor-gardens, SW1. The papers and discussions cover a range of subjects including the properties of various types of cement, cements for special purposes, cement manufacturing techniques and the early history of cement in England. Copies, price £3, are available to non-members.

BUILDERS AND SEWERS

Some Legal Points

WHEN a builder wishes to erect a house or a number of houses, writes a legal correspondent, he has usually to obtain permission from the local authority under building by-laws and under town planning. Then the question of connections to the local authority sewers arises. But the builder may encounter the local authority in another way. As an owner of land he may be faced by the fact that the local authority wish to place a sewer through his land. In this case he may wish to be assured that he receives compensation. Therefore it is advantageous for some knowledge of the Public Health Acts to be acquired.

The position of the owner of land is relatively simple. It is important that the local authority should be empowered to lay sewers through private land quickly, and therefore on giving reasonable notice under S.15 of the Public Health Act, 1936, they can enter and lay sewers. The owner can claim compensation and this amount is settled on behalf of the local authority by the district valuer. Although local authorities can enter on a bare notice, they usually negotiate a way leave. This gives them a legal right, and as it is a legal document it should be vetted on behalf of the owner by a solicitor whose expenses will be paid by the local authority. Compensation may be reduced by the fact that the sewer enhances the value of the land and, of course, from the builder's viewpoint this is a point to be considered. In many cases where disturbance of the land is nil the compensation is merely nominal, say £1 per annum. One point which may arise is that S.25 of the 1936 Act empowers a local authority to reject building applications where it is proposed to build over a sewer or drain unless they are satisfied that this complies with certain requirements. Therefore, if the builder's plans envisage the erection of houses over the place where the sewer is proposed he should discuss the matter as early as possible with the borough surveyor.

In regard to the building contractor who requires permission for the sewering of his houses he should put in plans under building by-laws. For a proposed drain or sewer to be satisfactory it must either under S.37(3) "connect with a sewer; discharge into a cesspool or some other place." It is the duty of the local authority to provide sewers for the area, but only where a proposed building is within 100ft. of the sewer can they require it to be drained into the sewer, and then only where the levels are suitable and the intervening land is land through which the builder is entitled to construct a drain. A sewer under the Public Health Act is normally a pipe which drains more than one building. Where an estate is being developed the builder arranges for the sewering, although there is an important provision that the local authority can agree before the land is developed at some future date or on some future event, i.e., completion of the estate, that the sewers will vest in them. That means that in future the local authority will be responsible for their repair and maintenance.

The proposal of the builder to connect to an existing sewer may cause one or two difficulties. In the first place the local authority might envisage that a larger sewer or drain is required than he proposes to put in. In this case they are entitled to require him to put in this larger drain or sewer to form part of the general sewerage system at the expense of the local authority. They cannot impose the cost on the builder by making it a condition under planning that he puts in a larger sewer. The point may arise when the builder's land adjoins the site of a proposed school. In this case the local authority appear to be in a difficulty as, if they are not the local education authority, they would not wish to pay for the cost of the larger sewer, yet if a smaller sewer is put in it may cost more in the long run to replace it by a larger sewer when finally the school is built.

A second point is that under S.37 of the Act of 1936 the local authority can reject plans unless there is satisfactory provision for drainage. A local authority can require two or more buildings to be drained in combination by means of a private sewer and fix the proportions payable. The local authority under S.34(3) may refuse a communication or connection if the making thereof would be prejudicial to their sewerage system. The sewers may not be sufficient to take the additional sewage. These are, of course, matters which the wise developer will investigate prior to the submission of plans.

WORKING PLATFORM GUARD RAILS

Mevagissey Builders Fined

A BUILDING firm was fined £5 at St. Austell magistrates' court on November 24 for contravening a section of the Building (Safety, Health and Welfare) Act of 1948. A plea of guilty was entered.

The firm concerned was Facey, Lobb and Roberts, Ltd., of Valley-road, Mevagissey. Prosecuting, Mr. G. T. Parkes, HM Inspector of Factories, said that the offence occurred on a new council house estate at Eastbourne, St. Austell, where a plasterer, Mr. Stanley Clemes, was working on a platform 11 ft. above the ground.

Mr. Parkes said that the Act stipulated that a man on a working platform more than 6 ft. 6 in. above the ground must be provided with a guard rail and toe board. The platform being used by Mr. Clemes had neither. The potential danger of a man slipping or becoming dizzy should have been realised by the company. A man working so far above the ground must be adequately protected, and that was why guard rails and toe boards were stipulated.

Mr. N. D. Facey, appearing for the firm, said that the men rigged their own scaffolding, and should know what they required. Evidence was also given by Mr. Clemes, of 13, Clifden-road, St. Austell, who said that a guard rail and toe board might have impeded his work on the day in question.

In addition to the fine of £5, Facey, Lobb and Roberts, Ltd., were ordered to pay 12s. witnesses' expenses.

SEWAGE SLUDGE

The report of an informal working party on the "Treatment and Disposal of Sewage Sludge" has now been published by the Stationery Office, price 2s. 6d.

LONDON BUILDERS FOREMEN'S ASSOCIATION

Address by Mr. Woodbine Parish

THE November meeting of the London Builders Foremen's Association was held at the Memorial Hall, Farringdon-road, under the chairmanship of the president, Mr. F. A. Dryland. MR. D. E. WOODBINE PARISH, former president of the LMBA, addressed members on the subject of "Building Contracts." He briefly explained the principles of contract law, with particular reference to the responsibilities of a general foreman under the standard form of RIBA Building Contract.

Mr. Parish said he felt there was a measure of laxity and indifference within the industry with regard to discharging in detail all the conditions and obligations contained in the standard form of contract, and that it was often only as a result of hard experience that the full impact and intent of the conditions of contract became apparent. He urged general foremen to realise the immense importance of maintaining a day-to-day diary in which all matters affecting the contractor's obligations and responsibilities to the building owner were recorded in addition to taking the requisite action to comply with the conditions of contract. Such matters included recording and confirming the receipt of verbal instructions issued by the architect or the clerk of works on site, recording details of weather conditions particularly during wet, or frosty, periods which adversely affect the progress of work; the interference of the work programme resulting from the necessary instructions not having been issued in due time; and the delays on the part of nominated sub-contractors or nominated suppliers which occurred despite every effort having been made to ensure proper performance or delivery within the terms of a sub-contract or order.

Mr. Parish directed particular attention to the liabilities which existed under the standard form of contract for giving notice to local and public authorities to comply with statutory regulations and by-laws, setting out the work, making good defects, and the scope of insurance indemnities.

HOUSING IN LIVERPOOL

Multi-Storey Flats Proposal

VISIONS of blocks of municipal flats rising to a height of 19 storeys in the centre of Liverpool were conjured up at a meeting of the City Council the other day when the Socialists objected to a report by a deputation, including one of their own group, which recently visited America to study multi-storey building operations. Their objections were overruled.

The report recommended that redevelopment should be made on a major scale comparable with that of Washington Square, and the Socialists asked for a further report on the policy of providing terraced houses.

"Flats are horrible, and not fit for people with families," said COUNCILLOR F. H. CAIN.

It was pointed out by ALDERMAN BEWLEY, chairman of the housing committee, that 54,000 people were waiting for accommodation, and the suggestion that terraced houses would furnish the remedy was fallacious. "We are faced with a formidable task," he said. "It is essential that we should make the best use of every yard of land available for housing in the central areas because land for housing is fast running out."

TECHNICAL INFORMATION SERVICES

International Conference

THE first meeting of National Technical Information Services Officers took place at the Department of Scientific and Industrial Research in London from September 27 to October 2. Representatives from 13 countries, including France, Germany and the United States, attended the meeting, which was organised by the European Productivity Agency.

On the first day of the conference, DR. KING welcomed the delegates both as chairman of the Productivity and Applied Research Committee of EPA, and as head of the Intelligence Division of DSIR. He said that in the UK DSIR had been convinced for some time that technical information had an important part to play in the productivity drive. He hoped that the conference would be useful in exchanging information about how technical information services at the national level could be run. The position varied from country to country.

FINANCE

On the following day, MR. TIETZ spoke on the question and answer service in the Office of Technical Services, Washington. DR. URQUHART talked about publicity for the question and answer services in the UK, and DR. GRELL, in charge of Technical Information Services at the EPA, described OEEC projects in the question and answer field. There was some discussion on the finance of these services, and there was general agreement that these could not be organised so that they paid for themselves. It was felt that OEEC could help by the preparation of a paper on how information centres were financed in different countries. In particular, the problem of developing a European digest service was considered. It was thought that the best way of starting such a service would be for EPA to place contracts for the preparation of digests from the national literature in member countries. In the meantime the UK offered to make available copies of the digests at present prepared for circulation within the UK to any interested national centres.

SELECTION OF DOCUMENTS

The meeting then turned to the selection and distribution of documents under the Documents Exchange Scheme. It is clear that there is no homogeneous scheme for selection and opinions as to the value of the documents received differed widely. There was general agreement that the scheme was useful with regard to documents that were not available through normal commercial channels, but there was considerable doubt in some countries whether the scheme was useful for documents which could be purchased through a bookseller.

During the conference visits were made informally to the different sections of the DSIR Headquarters, information services, and a number of visits were arranged to different organisations in and around London. These included the British Productivity Council, the Science Museum, the Patent Office and the Chemical Research Laboratory. On September 30, there was an official reception at the Dorchester Hotel at which guests were received by Mr. J. R. Bevins, MP, then Parliamentary Secretary to the Ministry of Works.

COMPACTION PLANT PERFORMANCE

Road Research Paper

ROAD Research Technical Paper No. 33, entitled "Further Studies in the Compaction of Soil and the Performance of Compaction Plant," has been published by the Stationery Office, price 3s., for the Department of Scientific and Industrial Research. It gives the results of tests by the Road Research Laboratory on the performance of the wide range of compacting machines used in this country.

Soils were chosen for the investigations as being representative of most British soils. They were a heavy clay, a silty clay, a sandy clay, and sand and a gravel-sand-clay (hoggin). Fourteen types of compaction plant were studied. They included track-laying tractors, which, though not strictly compaction plant, tow compaction plant proper and therefore contribute to the compaction process. The types used in the tests were smooth-wheeled rollers, a pneumatic-tyred roller, sheepsfoot rollers, rammers, vibrating smooth-wheeled rollers and plate vibrators.

RESULTS OF TESTS

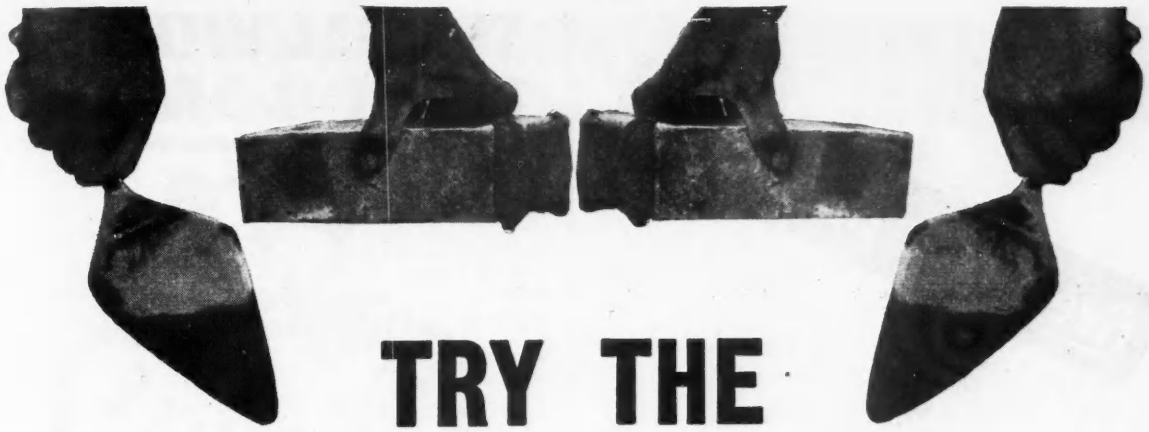
An eight-ton smooth-wheeled roller produced very high states of compaction with all the test soils. A 12-ton pneumatic-tyred roller was equally satisfactory in compacting the cohesive soils, but its performance was poorer on the granular soils. Although their outputs were much lower, a 12-cwt. frog-rammer and four makes of 2-cwt. power-rammers were also capable of producing high states of compaction with all the soils. Vibrating rollers and vibrating plate compactors achieved the best results on the granular soils. These machines were not found to be particularly satisfactory for the compaction of the cohesive soils. The paper gives the outputs of the machines and also the costs per cu. yard of compacting soil satisfactorily.

The selection of moisture content at which to compact is a difficult problem. The paper suggests that soils should be compacted at their natural moisture content measured below the top 3-4 ft. of soil usually affected by weather conditions. The compaction necessary in road embankments depends on the amount of settlement which can be tolerated and on the requirements for the stability of the slopes. The state of compaction of a number of existing embankments has been measured. The results showed that the main bulk of the fill need not usually be compacted to a higher state of compaction than that corresponding to 10 per cent. of air voids. A higher state of compaction is probably needed in the top 1-2 ft. of fill to prevent settlement due to the action of traffic and vibration over a long period.

Specifications for the state of compaction required in earthworks are usually expressed in terms of the maximum dry density obtained in the laboratory compaction tests. The Laboratory considers this method unsatisfactory, and the paper suggests an alternative method of specification in terms of a maximum percentage of air voids in the soil.

BUILDING PLANT EXHIBITION

The 1955 Building Plant Exhibition, organised by the Ministry of Works, will be held on the Queenslie Industrial Estate, Glasgow, from June 8 to 15 inclusive.



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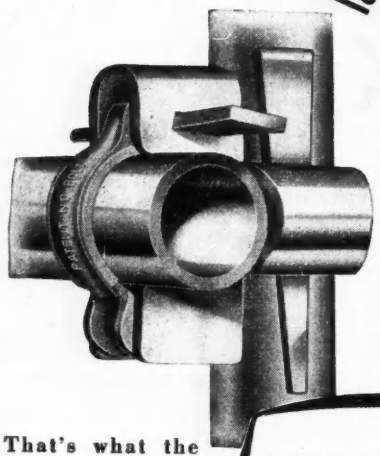

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The Builder

CURRENT PRICES OF MATERIALS

THE information given on these pages has been specially compiled for *The Builder* and is copyright. It is the intention that the details given should indicate fair average prices of materials not necessarily the highest or the lowest. The prices apply to large quantities of materials loaded at works, delivered at London Stations or at site in London Area as stated. Prices for smaller quantities ex merchants warehouse will necessarily be higher so as to include the stocking and handling costs involved. Due to the exceptional circumstances now prevailing it is recommended that the prices of materials should be confirmed by inquiry from suppliers and merchants.

AGGREGATES AND SAND

Delivered site in full lorry loads. Average of prices for Boroughs of Westminster, Paddington, Holborn and St. Pancras.

		£	s.	d.
Pit Ballast	per yd.	1	3	1
Pit Sand	,,	1	1	8
Washed Sand	,,	1	3	8
¾ in. Shingle	,,	1	0	0
¾ in. Broken Brick	,,		19	3
Pan Breeze	,,		9	6
Fine or Coarse Foamed Slag Aggregate	per ton	3	0	9
2 yds. of fine and 2.6 yds. of coarse per ton				

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6-ton loads and upwards, site	per ton	4	16	6
1 to 6 tons, site	,,	5	5	6
Ferrocrete Rapid Hardening Cement in 6-ton loads and upwards to site	,,	5	4	6
1 to 6 ton do. site	,,	5	13	6
Aquacrete Water Repellent Cement. 32s. 6d. per ton on ordinary cement prices.				
Red, Buff or Khaki Colorcrete in 6-ton lots ...	,,	6	18	0
Other colours according to colour.				
In 4-ton lots from 211s. 9d. to 435s. 9d. per ton.				
White Portland Cement	,,	12	17	0
Under 1 ton	per cwt.		15	4
417 Cement (Ultra Rapid Hardening) in 6-ton lots and upwards	per ton	6	9	0
Super Cement (Waterproof), 32s. 6d. per ton above Portland Cement.				
Cullamix Tyrolean Finish, £9 4s. 3d. to £10 17s. 9d. (1-ton loads and upwards).				
Lightning and Ciment Fondu Brands High Aluminous cement, 6-ton lots and up	,,	14	0	9
Stourbridge Fireclay, 6-ton loads at Railway Depot, London	,,	6	2	3

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Second Hard Stocks	,,	10	11	0
Mild Stocks	,,	8	16	6
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District Commons	,,	5	13	0
Cellular do.	,,	5	13	0
Keyed do.	,,	5	15	0
Rustics	,,	6	18	0
Cellular Rustics	,,	6	18	0
Single Bullnose do.	,,	6	13	0
Sandfaced	,,	7	13	0
Best Blue Pressed Staffs (London Stations) ...	,,	24	19	6
Do. Bullnose (London Stations)	,,	25	13	6
Blue Wire Cuts (London Stations)	,,	22	11	0
Midhurst Lime Bricks (London Sites)	,,	10	3	0
Uxbridge Whites (London Sites)	,,	9	1	6
2½ in. Best Stourbridge Fire Bricks (London Stations)	,,	24	6	0
3 in. do. (London Stations)	,,	29	3	3
2⅝ in. Machine-made Sandfaced Red Facings (London Sites)	,,	13	19	6
2⅝ in. Machine-made Multi Red Facings (London Sites)	,,	14	4	6
2⅝ in. Hand-made Sandfaced Red Facings (London Sites)	,,	14	7	0
2⅝ in. Hand-made Sandfaced Multi-Colour Facings (London Sites)	,,	14	7	0
Hand-made Sandfaced Cherry Red Facings. Berkshire district (London Sites)	,,	17	5	6
Hand-made Sandfaced Multi Colour Facings. Berkshire district (London Sites)	,,	17	5	6
Rubber Bricks for ganged arches (London Sites) ...	per 1,000	41	10	0
2⅝ in. Surrey Clamp Burnt Multi Stock Facings (London Sites)	,,	13	6	0
2⅝ in. Surrey Kiln Burnt Multi Stock Facings (London Sites)	,,	14	4	6
Glazed Bricks (London sites), White, Ivory, Brown—				
Stretchers	,,	64	0	0
Headers	,,	63	0	0
Quoins, Bullnose and 4½ in. Flats	,,	80	0	0
Double Stretchers	,,	85	0	0
Double Headers	,,	77	10	0
One side and two ends	,,	87	0	0
Two sides and one end	,,	89	10	0
Splays and Squints	,,	83	0	0
Cream and Buff £3 extra over White. Other colours, hard glaze, £8 10s. 0d. extra over White. All above prices plus 7½% for Best quality and plus 7½% less 10% for Second quality.				

PARTITION SLABS, etc.

Delivered Central London Area.

HOLLOW CLAY PARTITION BLOCKS (Keyed)

	Minimum lorry loads.			
2 in.	140 yds.	per yd. sup.	4	3
2½ in.	140 yds.	,,	4	6
3 in.	120 yds.	,,	5	2
4 in. (6 cavity) ...	95 yds.	,,	6	7
Half blocks at no extra charge.				

CLINKER CONCRETE.

2 in.	100 yds.	,,	3	7
2½ in.	85 yds.	,,	4	2
3 in.	75 yds.	,,	5	0
4 in.	55 yds.	,,	6	2

CRANHAM

2 in.		,,	6	8
2½ in.		,,	7	4
3 in.		,,	8	7
4 in.		,,	10	7
4½ in. Load bearing quality		,,	11	8

FLOOR BLOCKS

3 in. Floor Blocks 12 in. by 12 in. delivered in full lorry-loads	per 1,000	32	11	0
4 in. do.	,,	34	18	0
5 in. do.	,,	41	11	0
6 in. do.	,,	46	16	0
7 in. do.	,,	56	18	0
8 in. do.	,,	66	14	0

STONEWARE DRAIN PIPES, etc.

The following are the percentages to be added to the Standard List prices delivered London Area.

	Over 2 tons	Over 100 Pieces under 2 tons	Under 100 Pieces under 2 tons
Best Quality	+67½%	+97½%	+107½%
B.S.S. Best do.	+10% +67½%	+10% +97½%	+10% +107½%
Tested Quality	+37½% +67½%	+37½% +97½%	+37½% +107½%
B.S.S. Tested do.	+47½% +67½%	+47½% +97½%	+47½% +107½%

		£	s.	d.
3 in. Land Drain Pipes (in 12 in. lengths)	per 1,000	10	13	6
4 in. do.	,,	14	2	0

STONE

Bath Stone—				
Monks Park	per ft. cube		7	10
St. Aldhelm Box Ground	,,		8	10
Delivered in railway trucks at South Lambeth B.R. Western Region				
Doulting Stone Random Blocks. Delivered London area	,,		8	4
Beer Stone. Delivered London area	,,		8	0
Portland Stone—				
Brown Whitbed in random blocks, 20 ft. average delivered in railway trucks at Nine Elms, B.R. Southern Region			8	1½
Yorkshire Stone—Blue Robin Hood Quality.				
Delivered to site London in 6-ton lots.				
9 in. × 3 in. Rubbed, weathered, throated and stooled cills	per ft. cube	3	4	3
12 in. × 6 in. do. do.	,,	2	6	0
12 in. × 3 in. Plain coping, twice throated ...	,,	1	15	4
12 in. × 3 in. Weathered and twice throated coping	,,	2	7	4
14 in. × 6 in. do. do.	,,	2	2	8
4½ in. × 9 in. Plinth, rubbed on top and face ...	,,	1	18	1
3 in. sawn two sides Slabs, random sizes ...	per ft. sup.		6	9

STONE—*continued*

		£	s.	d.
Templates and Cover Stones, 3 in., 4 in. and 6 in. thick, edges coped for rendered brickwork ...	per ft. cube	1	3	5
Do. do. fair one edge for fair faced brickwork		1	7	10
Hard York—				
12 in. ×2 in. Square Steps, rubbed on top and edge	per ft. run		8	2
14 in. × 3 in. Round-nosed Steps, rubbed on top and front	per ft. cube	2	3	8
12 in. ×6 in. Plain Steps, rubbed top and front ...	,,	1	18	3
2 in. Rubbed and Jointed Paving, given sizes ...	per ft. sup.		7	10
2 in. Sawn Paving, edges squared, in random sizes	per yd. sup	2	13	10

TILES and PANTILES

Delivered London area by road in 6 tons or over per 1,000

	£	s.	d.
Machine-made Pantiles and French pattern Tiles from Lincolnshire district	29	8	0
Hand-made Pantiles Berkshire district	47	10	0
Hand-made Double Roman Bridgwater district	58	13	6
Hand-made 10½ × 6½ tiles Berkshire district	13	1	9
Machine-made 10½ × 6½ Staffordshire district	13	8	9
Hand-made Hip and Valley tiles per doz.	1	8	9
Machine-made Hip and Valley tiles do.	1	6	6
Concrete tiles 10½ × 6½	7	14	6
do. Interlocking (49S)	18	9	6

NOTE.—Breakage in transit, purchasers' responsibility.

SLATES

First-quality Slates from Penrhyn or Portmadoc, carriage paid in full truck loads to London Rate Station. Per 1,000 actual.

	£	s.	d.
24 × 12	113	0	4
22 × 12	93	16	0
22 × 11	84	15	0
20 × 12	79	19	6
20 × 10	74	12	0
18 × 10	53	18	9
18 × 9	47	5	6
16 × 10	44	7	0
16 × 8	34	10	6

NOTE.—Breakage in transit, purchasers' responsibility.

TIMBER

			£	s.	d.
Softwood—					
Joinery quality	Ex. Wharf	per standard	£105 to £125		
Carcassing quality	do.	,,	£95 to £100		
1 in. Tongued and Grooved Flooring	do.	,,	£106	0	0
Hardwood—					
Mahogany—African S.E. ...	do.	per ft. cube	1	5	0
do. Honduras do. ...	do.	,,	3	5	0
Oak European do. ...	do.	,,	1	18	6
do. Japanese do. ...	do.	,,	2	5	0
do. English Logs sawn	do.	,,	1	5	0
Teak 8 in. average S.E.	do.	,,	3	0	0
Walnut African Logs sawn	do.	,,	1	1	6

DOORS (in Lots I-II)

Delivered London area.

		£	s.	d.
1½ in. 4 Horizontal Panel Pattern 4 in. deal				
2 ft. 0 in. × 6 ft. 6 in.	each	1	12	0
2 ft. 3 in. × 6 ft. 6 in.	,,	1	13	0
2 ft. 6 in. × 6 ft. 6 in.	,,	1	14	0
2 ft. 9 in. × 6 ft. 6 in.	,,	1	16	6
2 in. do. but top panel open. Pattern 4 × G in deal				
2 ft. 6 in. × 6 ft. 6 in.	,,	2	9	0
2 ft. 9 in. × 6 ft. 6 in.	,,	2	11	6
2 in. Panel, top panel open. Pattern 2 × G in deal				
2 ft. 6 in. × 6 ft. 6 in.	,,	2	1	9
2 ft. 9 in. × 6 ft. 6 in.	,,	2	3	6

SUNDRIES

Delivered London area

		£	s.	d.
1 in. Wood Wool Slabs, 6 ft. 0 in. × 2 ft. 0 in. in quantities of 1 ton (89 yds. to 1 ton)	per yd.		5	8
1½ in. do. (67 yds. to 1 ton)	,,		7	4
2 in. do. (52 yds. to 1 ton)	,,		8	11½
2½ in. do. (45 yds. to 1 ton)	,,		10	3
3 in. do. (39 yds. to 1 ton)	,,		11	5½
Quantities under 1 ton add 1d. per ¼ in. of thickness.				
¼ in. imported insulation Board, quantities over 5,000 sq. ft.	per 100 sq. ft.	2	2	6
¼ in. Hardboard do.	,,	2	1	6
⅛ in. do. do.	,,	3	2	6
⅛ in. Asbestos Flat Building Sheets	per yd. sup		3	2
Roofing Felt, 1-ply	,,		1	6
do. 2-ply	,,		1	9
Best Scotch Glue, in slabs	per ½ cwt.	5	0	0
do. pearl	,,	5	5	0
Croid Glue	28 lb.	2	6	0
Cut Nails 3 in. (1-ton lots)	per ton	56	5	0
do. 4 in. and up (1-ton lots)	,,	52	15	0
Wire Nails, 3 in. (4-cwt. lots)	per cwt.	2	16	3
do. 4 in. and up (4-cwt. lots)	,,	2	12	9

METALS — STEEL JOISTS, ETC.

Basis Joists—

		£	s.	d.
6 in. × 5 in., 8 in. × 5 in., 8 in. × 6 in., 10 in. × 6 in. 12 in. × 6 in. plain cut to lengths delivered London area	per ton	38	7	6
Extra for sizes				
3 in. × 1½ in.	,,	3	10	0
3 in. × 3 in., 4 in. × 3 in., 5 in. × 2½ in. ...	,,	1	5	0
4 in. × 1½ in.	,,	3	0	0
4½ in. × 1½ in., 24 in. × 7½ in.	,,	2	0	0
5 in. × 3 in., 22 in. × 7 in.	,,	1	0	0
6 in. × 3 in.	per ton	1	10	0
9 in. × 7 in.	,,		5	0
10 in. × 4½ in. 12 in. × 5 in.	,,		15	0
5 in. × 4½ in. 6 in. × 4½ in. 7 in. × 3½ in. 7 in. × 4 in. 8 in. × 4 in. 9 in. × 4 in. 10 in. × 5 in. 10 in. × 8 in. 12 in. × 8 in. 13 in. × 5 in. 14 in. × 5½ in. 14 in. × 6 in. 14 in. × 8 in. 15 in. × 5 in. 15 in. × 6 in. 16 in. × 6 in. 16 in. × 8 in. 18 in. × 6 in. 18 in. × 7 in. 18 in. × 8 in. 20 in. × 6½ in. 20 in. × 7½ in.	,,		10	0
Steel angles average price	,,	39	12	6
Steel tees average price	,,	40	12	6
Fabricated work delivered London—				
R.S. Joists cut and fitted	,,	53	7	6
Compound girders	,,	58	12	6
Stanchions	,,	63	17	6
Compound stanchions	,,	67	7	6
In Roof Work—Trusses and Purlins	,,	79	7	6
Average prices not for awkward work.				
Mild Steel Ferro-Concrete bars to BSS785 ex London				
Stock ⅜ in. diam., and upwards	,,	39	14	6
¼ in. diam.	...per ton extra	4	7	0
5/16 in. do.	,,	3	7	0
⅜ in. do.	,,	2	9	6
½ in. do.	,,	1	12	0

MILD STEEL TUBES

Tubes to BSS1387 and Fittings. List prices and following discounts:

Galvanised Tube—	W.I. Fittings	Malleable Fittings
Class A — 1½%		
Class B + 7½%	Light + 23½%	Malleable List — 35% + 40%
Class C + 23½%	Heavy + 30½%	
Black—		
Class A — 22%		
Class B — 11½%	Light + 11%	Malleable List — 35%
Class C + ½%	Heavy + 18½%	

C.I. HALF-ROUND GUTTERS

Delivered London per yd. in 6-ft. lengths

	Gutters	Nozzles	Stop Ends
3 in.	3/4	2/11	/10½
3½ in.	3/7½	3/2	/10½
4 in.	4/8	3/7	1/3
4½ in.	5/1½	4/–	1/7
5 in.	5/9	4/4½	1/9

C.I.O.G. GUTTERS

	Gutters	Nozzles	Stop Ends
3 in.	4/3	3/10½	/11½
3½ in.	4/9	3/10½	1/3
4 in.	5/3	3/11½	1/7
4½ in.	5/9	4/8	1/9
5 in.	6/2½	5/4	2/–

C.I. RAIN-WATER PIPES

Per yd. in 6-ft. lengths

	Pipe	Bends	Branches
2 in.	6/9½	3/7	5/1
2½ in.	7/1	3/11½	7/–
3 in.	8/–	5/–	7/7½
3½ in.	9/–	5/11½	9/–
4 in.	10/6	7/3½	10/8

L.C.C. COATED SOIL PIPES

2 in.	8/–	6/1½	7/6
2½ in.	8/6	6/10	9/4½
3 in.	9/6	7/6½	11/2
3½ in.	10/7½	9/4½	13/0½
4 in.	12/1½	10/6	15/4

Above prices for gutters, rain-water and soil pipes for under 3 cwt. lot only. Lots over 3 cwt. see List No. 3200 dated May 1, 1952, plus 15% and tonnage allowance. 4-ton lots 5 per cent, 2-ton lots 2½ per cent.

L.C.C. COATED DRAIN PIPES

In 9-fts.

	cwt.	qr.	lb.	per yd.	Bends	Branches
4 in.	1	1	17	24/5	17/4	30/2
6 in.	2	0	1	36/3	36/–	61/9

ASBESTOS RAIN-WATER PIPES AND FITTINGS

Orders under £30 less 12½ per cent. discount.
Orders over £30 less 17½ per cent. discount.

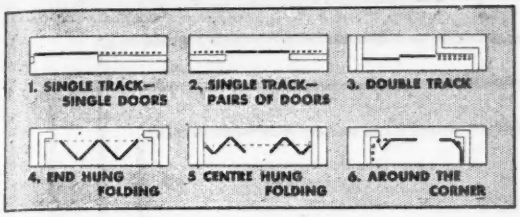
	2 in.	2½ in.	3 in.	4 in.
Pipes 6-ft. lengths ...per yd.	3/9	4/–	4/10	6/5
Shoes ... ... each	2/5	2/8	3/2	4/3
Single Branches ... ,,	3/9	4/6	5/4	7/6
Bends square or obtuse ,,	2/8	2/11	3/9	5/4
Swan Necks 4½ in. proj. ,,	2/11	3/9	4/3	5/11
do. 6 in. do. ,,	3/2	3/9	4/10	6/5

ASBESTOS O.G. GUTTERS AND FITTINGS

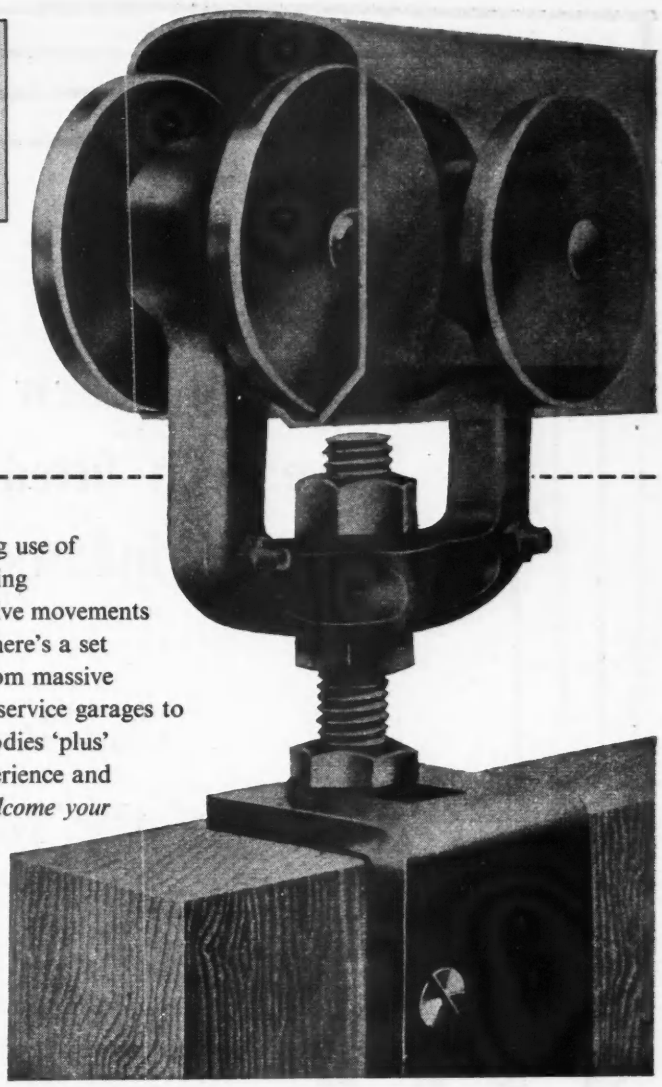
	4 in.	4½ in.	5 in.	6 in.
Gutters 6-ft. lengths ...per yd.	3/7	3/11	4/8	5/7½
Drop ends ... ... each	2/10	3/4	3/10	4/7
Stop Ends ... ... ,,	/10	/11	1/–	1/2
Angles ... ... ,,	2/11	3/5	4/1	4/10
Nozzles ... ... ,,	2/10	3/4	3/10	4/7
Union Clips ... ... ,,	1/5	1/8	2/1	2/5

ASBESTOS HALF-ROUND GUTTERS AND FITTINGS

	3 in.	4 in.	4½ in.	5 in.	6 in.
Gutters 6-ft. lengths ...per yd.	2/6	2/11½	3/0½	3/7	5/–
Drop ends ... ... each	2/1	2/5	2/8	2/11	4/3
Stop ends ... ... ,,	/9	/10	/11	1/–	1/2
Angles ... ... ,,	2/5	2/8	2/11	3/2	4/3
Nozzles ... ... ,,	2/1	2/5	2/8	2/11	4/3
Union Clips ... ... ,,	1/–	1/1	1/2	1/4	2/–


1. SINGLE TRACK—SINGLE DOORS
2. SINGLE TRACK—PAIRS OF DOORS
3. DOUBLE TRACK
4. END HUNG FOLDING
5 CENTRE HUNG FOLDING
6. AROUND THE CORNER

6 WAYS WITH SLIDING DOORS



Modern building design is making increasing use of sliding doors for smooth-running, space-saving efficiency. Here are six of the many alternative movements obtainable with KING Sliding Door Gear. There's a set of gear for every need in the KING range, from massive installations for factories, farms and public service garages to light-weight domestic doors. Every set embodies 'plus' features developed by solid engineering experience and proved in thousands of installations. *We welcome your enquiries and our Technical Department is always at your service.*

PRECISION-ENGINEERED *to the last detail. Note the bearing lubrication nipples in this* KINGWAY *door hanger: the flat wheel treads which spread the load at the wearing surface; the ease of vertical and lateral adjustment.*

KINGS STRENGTHEN YOUR HAND

KING REGISTERED TRADE MARK

SLIDING DOOR GEAR

(Covered by British and Foreign Patents)

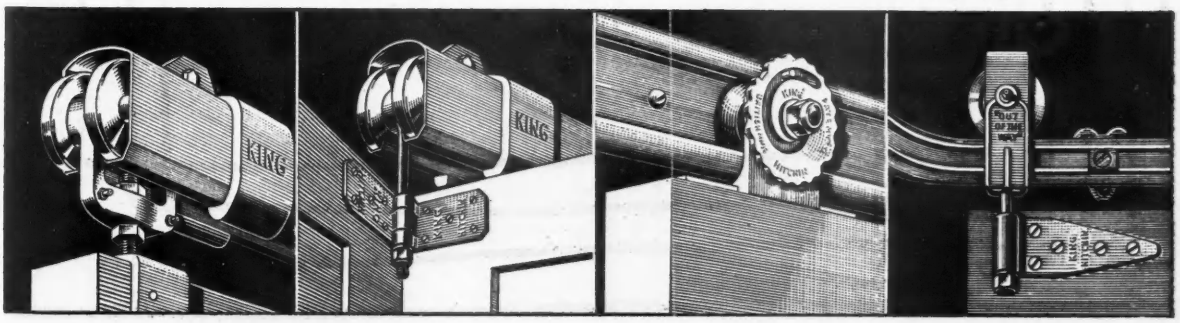
WRITE FOR ILLUSTRATED BOOKLET GEO. W. KING LTD., 202 ARGYLE WORKS, STEVENAGE, HERTS. STEVENAGE 440.

KING TUBULAR TRACK—*in 7 sizes for straight sliding doors up to 2 tons.*

KING TUBULAR TRACK—*for around-the-corner doors up to 5 cwts. per leaf.*

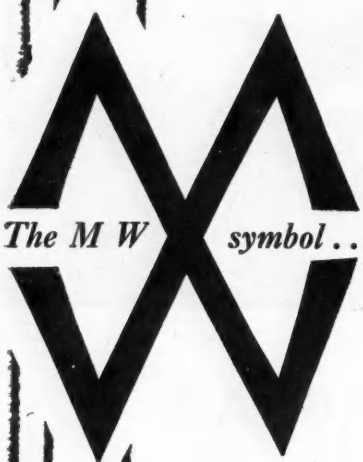
KING 'HOMESTIC' TRACK—*for straight sliding interior doors.*

KING 'MAJOR' TRACK—*for around-the-corner doors up to 3 cwts. per leaf.*



Since 1946–
2 out of 3 new homes have been fitted with Metal Windows

..due to the efforts of the Metal Window Association



The M W symbol..... of the Metal Window Association is a guarantee of good faith and good work. For many years the members have been gradually improving the efficiency and finish of Metal Windows.

THE METAL WINDOW ASSOCIATION

BURWOOD HOUSE, CAXTON STREET, LONDON, S.W.1.

METALS—*continued*

	Per ton basis in London £ s. d.
Iron—Staffordshire Crown Merchant Quality	40 2 6
Mild Steel Bars	37 17 6
Mild Steel Hoops	39 5 0
	Ex Merchant's Stock per ton Two-ton lots £ s. d.
Soft Sheets C.R. and C.A.—	
20 gauge	46 14 6
24 gauge	47 19 6
26 gauge	49 9 6
Galvanised Corrugated sheets 6 ft. to 9 ft.—	
20 gauge	53 12 0
24 gauge	55 12 0
26 gauge	58 7 0
Galvanised Flat sheets C.R. and C.A.—	
20 gauge	54 12 0
24 gauge	56 12 0
26 gauge	59 7 0

PLUMBERS' BRASS WORK, COPPER, ZINC, ETC.
Delivered in London area.

All per doz.	M.O.H. ½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
Screwdown bib cocks Crutch head for iron	77/-	114/6				
Toilet bib cocks for iron	99/-	142/-				
Screwdown stop cocks for iron	66/-	95/9	188/-	323/6	462/-	815/-
do. with two unions for lead	89/-	132/-	234/4	419/-	554/6	1234/3
Double nut boiler screws	16/6	23/3	42/-	43/-	59/6	83/8
Heavy Croydon ball valves	68/3	155/3	237/7	433/6	614/-	
Plumbers' union brass lead to iron	17/4	21/-	34/9	60/6	74/6	145/3
	1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
Caps and screws	29/9	36/4	52/9	82/6	105/6	137/6
Brass sleeves			27/6	27/6	49/6	66/- 67/-
	1½ × 6 lb.		1½ × 6 lb.	2 × 7 lb.		3 × 7 lb.
Lead P. trap with brass cleaning screws	63/6		79/6	127/-		217/3
Lead S. trap do.	77/-		95/-	156/3		281/-

		s. d.
Solder		
Plumbers'	per lb.	3 5
Tinmen's	,,	4 2
Blow pipe	,,	4 3

Copper tubes BSS 659/1944 on the basic price of 31½d. per lb. plus gauge and manufacturing extras as follows. Minimum quantities, 3 cwt.

	Extra d.	Total per lb. d.
⅛ in. × 19 gauge	12½	43½
¼ in. × 19 ,,	10½	42½
1 in. × 18 ,,	9½	40½
1½ in. × 18 ,,	8½	40½
1¼ in. × 18 ,,	8½	40½
2 in. × 17 ,,	10½	41½

		£ s. d.
Rolled Copper sheets up to 48 in. wide, basic price plus gauge and manufacturing extras	per ton	329 15 0
Sheet Zinc, 10 gauge (25 SWG) 5 cwt. lots upwards	per cwt.	7 19 6
do. 12 gauge (23 SWG) do.	,,	7 17 6
do. 14 gauge (21 SWG) do.	,,	7 16 3
Brass tubes basic price, plus gauge and manufacturing extras	per lb.	2 1½

LEAD SHEET AND PIPES

Basis selling price in minimum one-ton delivery to one address in London or Home Counties

		£ s. d.
Lead Sheet, English, 3½ lb. substance and upwards	per ton	142 5 0
Lead Water Pipe in coils	,,	143 10 0
Lead Soil Pipe 10 ft. or over 2 in. to 4 in. dia.	,,	145 0 0
do. over 4 in. dia.	,,	147 0 0
Lead Gas or Untinned Compo pipe	,,	145 0 0
Extras over Basis for quantities under 1 ton		
5 cwt. and under 1 ton	per cwt.	2 0
3 cwt. do. 5 cwt.	,,	4 0
1 cwt. do. 3 cwt.	,,	6 0

Smaller quantities than 1 cwt. priced specially.
Supplying sheet lead and lead pipe to less than basis weights and cutting to sizes less than basis charged extra according to current trade schedule.
Allowance for Old Lead, collected £100 5s. 0d. per ton weighed at buyer's works.

PLASTER, etc.

		£ s. d.
Coarse Pink in 1-ton loads and over Delivered on Site	per ton	7 6 6
do. White do. do.	,,	7 14 3
Sirapite Coarse do. do.	,,	7 9 0
do. Fine do. do.	,,	7 17 0
Blue Lias Lime in 6-ton loads	,,	6 9 6
Hydrated Lime do.	,,	5 12 6
Lump Lime do.	,,	5 2 0
White Keen's or Parian Cement in 1-ton loads	,,	10 4 0
Pink Keen's or Parian Cement in 1-ton loads	,,	9 18 6
Granite Chips in 6-ton loads	,,	2 6 3
Hair	per cwt.	4 17 6
Gypsum Plaster Lath or Base Board ⅜ in. thick 600 yds. and over in one delivery. Delivered site	per yd.	2 2
1,200 yds.	,,	2 1½
Gypsum Plaster Wall Boards, 3 and 4 ft. wide, 6 to 12 ft., ½ in. thick, 600 yds. and over in one delivery. Delivered site	,,	2 5
1,200 yds.	,,	2 4½

PAINT AND DISTEMPER

Delivered London area		£ s. d.
Ceiling Distemper	per cwt.	1 7 6
Washable Distemper	,,	5 5 0
Gloss Paint	per gal.	2 10 0
Snowcem cement paint (in 1 cwt. drums)	per cwt.	3 11 0

LEAD PRODUCTS AND OILS.

Ground White Lead, 1 cwt. kegs	per cwt.	8 18 0
Genuine White Lead Paint, 1-19 gal. lots in 1 gal. tins	per gal.	3 2 0
Genuine Red Lead, Dry, 1 cwt. keg	per cwt.	7 4 3
Genuine Linseed Oil Putty, 1 cwt. keg	,,	2 9 0
Size XD quality, 28 lb.	per tin	9 0
Raw Linseed Oil (5 gal.) Drums extra	per gal.	12 0
Boiled Linseed Oil (5 gal.) do.	,,	12 6

SUNDRIES.

Turpentine substitute (5 gal.) drums extra	,,	5 6½
do. do. (40 gal.) do. do.	,,	4 8½
Solignum, Brown (5 gal. cans) Exterior	,,	6 6
Creosote (40 gal. barrels)	,,	2 0
Paste Powder (1 lb. packets)	per lb.	1 6
White Lining Paper	per piece	1 0

VARNISHES, etc.

Delivered London area.		£ s. d.
Oak Varnish, Outside or Inside	per gal.	1 12 6
Oak Pale Copal do.	,,	1 15 0
Hard Drying Oak for Inside	,,	1 17 6
Crystal Paper Varnish do.	,,	2 2 6
Eggshell Flat Varnish do.	,,	2 2 6
Finest Carriage Varnish	,,	2 10 0
Front Door Varnish	,,	1 17 6
Japan Gold Size	,,	1 10 0
Black Japan	,,	1 5 0
Brunswick Black	,,	1 0 0
Berlin Black	,,	1 5 0
Terebene	,,	1 5 0
Knotting (1 gal. bottles free)	,,	2 0 0
French and Brush Polish (do.)	,,	1 13 0

GLASS

Delivered London area.	Per ft. super s. d.
18 oz. Sheet Glass Ordinary Glazing Quality. Cut Sizes	5½
24 oz. ,, ,, ,, ,, ,, ,,	7½
26 oz. ,, ,, ,, ,, ,, ,,	10
32 oz. ,, ,, ,, ,, ,, ,,	1 1
⅛ in. Rolled Plate	9
3/16 in. and ¼ in. Rough Cast	1 0
⅛ in. Figured Rolled and Cathedral, Standard patterns : White	9
do. Standard Tints	1 4½
do. Special Tints	2 9
⅛ in. Pinstripe, Hammerstripe, Reeded, Reedlyte and Luminating	1 1
⅛ in. Wired Cast	1 2
¼ in. Georgian Wired Cast	1 2½
Hollow Glass Blocks—	Each
P.B.2 5½ × 5½ × 3 7/8 in.	2 9
P.B.3 7½ × 7½ × 3 7/8 in.	4 2
P.B.32 7½ × 7½ × 3 7/8 in.	4 2
Radiused Corner Blocks to match up with—	
P.B.2	5 3
P.B.3	6 9
P.B.32	6 9

¼ in. Polished Plate Glass, G.G. Quality—	Per ft. super s. d.
In plates not exceeding 2 ft. sup.	3 7
,, ,, ,, 5 ft. sup.	4 5
,, ,, ,, 45 ft. sup.	5 1
,, ,, ,, 100 ft. sup.	5 6

¼ in. Polished Plate, extra sizes, *i.e.*, plates exceeding 100 ft. sup. or 160 in. one way or 96 in. both ways. G.G. quality—

Not exceeding 135 ft. sup. or 250 in. one way or 135 in. both ways	8 4
Not exceeding 180 ft. sup. or ditto	11 3
Not exceeding 200 ft. sup., or ditto	16 0

Plates exceeding 200 ft. sup. prices on application.
Substances other than ¼ in. Polished Plate at Special Prices.

Quantity Tariff—Sheet and Sundry Glass.
The following prices apply to minimum quantities of one size and one pattern delivered by the manufacturer to one site at one time.

Description of Glass	Minimum quantity	Per ft. super s. d.
18 oz. sheet O.Q.	3,000	4½
24 oz. ,, ,,	2,000	6½
26 oz. ,, ,,	2,000	7½
32 oz. ,, ,,	2,000	10½
⅛ in. Rolled Plate	1,000	7½
⅛ in. Figured Rolled and Cathedral Standard Patterns, White	1,000	7½
⅛ in. Pinstripe, Hammerstripe, Reeded, Luminating and Spotlyte	1,000	10½
3/16 in. and ¼ in. Rolled Plate or Rough Cast	2,000	10½
¼ in. Wired Cast, Hexagonal	2,000	11½
¼ in. Georgian Wired Cast	2,000	1 0½

The Builder

CURRENT RATES OF WAGES

AS FROM OCTOBER 4, 1954. (Every endeavour is made to ensure accuracy but we cannot be responsible for errors.)

KEY TO SCHEDULE OF GRADE RATES.

Grade Classification.	A	A1	A2	A3
Craftsmen	3/9	3/8½	3/8	3/7½
Labourers	3/3½	3/3	3/2½	3/2

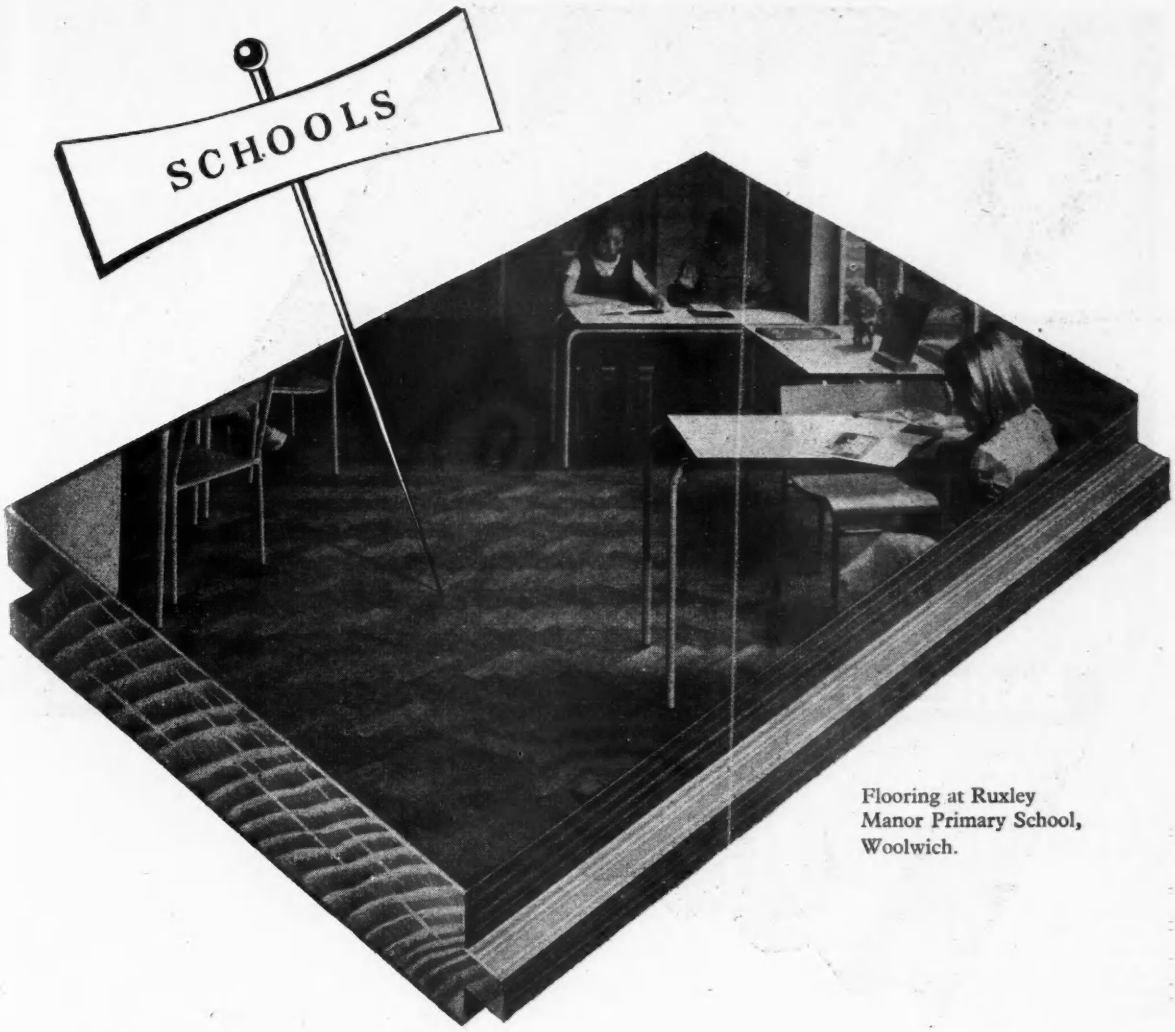
Town.	Grade
Aberavon	A
Aberdare	A
Abergavenny	A
Abingdon	A2
Accrington	A
Addlestone	A
Aldeburgh	A2
Aldershot District	A2
Alfreton U.D.	A
Alnwick	A1
Altrincham	A
Amble	A1
Amersham	A1
Ammanford	A
Andover	A2
Ardingly	A2
Arundel	A2
Ascot	A2
Ashby-de-la-Zouch U.D.	A
Ashby Woulds U.D.	A
Ashford (Kent)	A2
Ashford (Middlesex)	A
Ashington	A
Ashtead	A
Ashton-under-Lyne	A
Aspatria and Brayton	A2
Atherstone R.D. (parts of)	A
Aylesbury	A2
Aylesby (Yorks)	A
Aylesham	A2
Bagshot	A2
Bakewell U.D.	A2
Banbury	A2
Barnard Castle U.D.	A
Barnoldswick U.D.	A
Barnsley	A
Barrow-in-Furness	A
Barrow-upon-Soar R.D. (exc. Thrussington A2)	A
Barry	A
Basford R.D. (exc. Willoughby-on-the-Wolds A1)	A
Basingstoke	A1
Bath	A
Batley	A
Baxterley	A1
Beaconsfield & District	A1
Beamish	A
Bearl	A
Bearpark	A
Beccles	A2
Bedale R.D.	A
Bedford	A
Bedlington	A
Bedwas	A
Beeston & Stapleford U.D.	A
Belper U.D.	A
Belton	A
Berkhamsted	A
Berrington	A1
Berwick District	A
Beverley	A
Bexhill-on-Sea	A2
Biggleswade	A2
Billericay	A
Billing	A
Billingham U.D.	A
Bilsthorpe	A
Birchington	A2
Birkenhead	*
Birmingham C.B.	†A
Bishop Auckland	A
Bishop's Stortford	A
Bispham	A
Blackburn	A
Blackpool	A
Blackwell R.D.	A
Blaydon U.D.	A
Blidworth	A
Blyth	A
Bognor Regis	A2
Boldon U.D.	A
Bolsover U.D.	A
Bolton	A
Bourne End	A1
Bournemouth District	A
Bracknell	A2
Bradford	A
Bradford-on-Avon	A2
Braintree	A1
Breconshire, County of	‡A2
Brent Knoll	A2
Brentwood	A
Bridlington	A
Brierfield	A
Brighouse	A
Brighton	A
Bristol	A
Broadstairs	A2
Bromsgrove U.D.	A
Brough	A
Broughton (Cheshire)	A
Buckley	A
Bungay	A2
Burnham-on-Crouch	A2
Burnley	A
Burton-on-Trent C.B.	A
Bury	A
Bury St. Edmunds	A1
Buxton	A
Byfleet	A1
Calder Valley	A
Cambridge	A
Cannock U.D.	A
Canterbury	A2
Cardiff	A
Cardiganshire, County of	‡A2
Carlisle	A
Carmarthenshire, Cnty of	‡A2
Caernarvonshire, Cnty. of	‡A2
Carnforth	A
Castleford	A
Caterham	A
Chapel-en-le-Frith	A
Charmy Down	A
Chatham & District	A1
Cheadle (Staffs) R.D.	A
Chelmsford	A
Cheltenham	A
Chepstow	A1
Chertsey	A
Chester	A
Chesterfield M.B.	A
Chesterfield R.D.	A
Chester-le-Street U.D.	A
Chichester	A2
Chippenham (inc. Chippenham Within and Hardenhuish)	A2
Chorley	A
Clacton	A1
Cleethorpes	A
Clevedon	A1
Cleveleys	A
Clitheroe	A
Coalville U.D.	A
Cobham (Surrey)	A
Colchester	A
Colne	A
Colwyn Bay	A1
Congleton	A1
Consett	A
Conway	A1
Cornwall, County of	‡A2
Coventry C.B.	A
Cranbrook	A2
Cranleigh	A2
Crawley (Sussex)	A1
Crewe	A
Cromer	A1
Crowborough	A2
Cuckfield	A2
Dalton-in-Furness	A
Darlington District	A
Darwen	A
Deal	A2
Denbigh Town	A2
Derby C.B.	A
Devizes	A2
Devon, County of	‡A2
Dewsbury	A
Didcot	A2
Diss	A2
Doncaster C.B.	A
Dorking	A
Dorset, County of (except-ing Poole, Swanage and Wimborne A1)	A2
Dover	A2
Dovercourt	A
Driffield U.D.	A1
Droitwich M.B.	A
Dudley M.B.	A
Dunstable	A
Durham City	A
Eastbourne	A
E. Glam. & Mon. Val.	A
East Grinstead District	A2
Eastwood (Notts.) U.D.	A
Ebbw Vale & District	A
Edenbridge	A2
Ely	A2
Epping	A
Exeter	A
Fakenham	A2
Falmouth	A2
Fareham	A
Faversham	A2
Felixstowe	A1
Filey U.D.	A
Fleetwood	A
Flint	A
Folkestone	A2
Frinton	A1
Frome	A1
Gainsborough U.D.	A
Gateshead	A
Gillingham (Kent)	A1
Glossop	A
Gloucester	A
Gloucestershire, Cnty. of	‡A2
Godalming	A2
Goole M.B.	A
Gosport	A
Grantham M.B.	A
Gravesend	A
Great Yarmouth	A
Grimsby C.B. & R.D. (part)	A
Grimsby R.D. (remainder)	A2
Guildford District	A2
Guilsborough	A1
Guiseley	A
Halesowen M.B.	A
Halifax	A
Halstead	A2
Haresfield	A1
Harlow	A
Harpenden	A
Harrogate	A
Hartlepool	A
Harwich	A
Haslemere	A2
Hastings	A2
Hatfield (Herts.)	A
Haywards Heath	A2
Hemel Hempstead	A
Henley-on-Thames	A2
Hereford	A2
Herefordshire, Cnty. of	‡A2
Herne Bay	A2
Hertford	A
Hexham U.D.	A
Heysham	A
High Wycombe	A1
Highworth	A2
Hinckley U.D.	A
Hitchin	A
Hoddesdon	A
Horley	A2
Horsham	A2
Horwich	A
Huddersfield	A
Hull	A
Hunstanton	A2
Huntingdon (Staffs)	A
Ilkley	A
Ingatestone	A1
Ipswich	A
Isle of Sheppey	A2
Isle of Thanet	A2
Isle of Wight	A2
Jarrow M.B.	A
Keighley	A
Kendal	A
Kenilworth U.D.	A
Kettering M.B.	A
Keynsham	A
Kidderminster M.B.	A
King's Lynn	A1
Kingskerswell	A1
Kingsteignton	A1
Kirkham	A
Knaresborough U.D.	A
Knowle	A1
Lancaster	A
Leamington M. B.	A
Leatherhead	A
Leeds	A
Leicester C.B.	A
Leighton Buzzard	A1
Letchworth	A1
Lewes	A2
Lichfield M.B.	A
Lincoln C.B.	A
Littlehampton	A2
Liverpool	*
Llandudno	A1
Llanelly	A
London	*
Long Eaton	A
Loughborough M.B.	A
Louth M.B.	A2
Lowestoft	A
Loxton	A2
Luton	A
Lyneham (Devon)	A2
Macclesfield	A
Maidenhead	A1
Maidstone	A1
Maltby	A
Maldon (Essex)	A1
Malvern U.D.	A1
Manchester	A
Manningtree	A1
Mansfield M.B.	A
March	A2
Margate	A2
Market Harborough U.D.	A
Maryport	A
Matlock U.D.	A1
Melksham	A2
Melton Constable	A2
Melton Mowbray U.D.	A1
Merthyr	A
Middlesbrough	A
Middleton	A
Middlewich	A
Milford Haven	A1
Morecambe	A
Morley	A
Mundesley	A2
Nantwich	A
Nelson	A
Newark-on-Trent R.D.	A1
Newbury	A2
Newcastle-on-Tyne	A
Newcastle-under-Lyme	A
New Forest District	A1
Newmarket	A1
Newport, Mon.	A
Newport Pagnell	A2
Newton Abbot	A1
Northallerton Dist.	A
Northampton C.B.	A
North Shields	A
Norton Radstock	A1
Norwich	A
Nottingham C.B.	A
Nuneaton M.B.	A
Oakham U.D.	A2
Oldham	A
Ongar	A
Ormskirk	A
Ossett and Horbury	A
Oxford	A
Oxted	A1
Paignton	A1
Peterborough	A
" Soke	A1
Pickering	A3
Plymouth	A
Pontefract	A
Pontypridd District	A
Portishead	A
Portland Stoneyards	A
Portsmouth	A
Port Talbot	A
Preston	A
Pudsey	A
Pulborough	A2
Radnorshire, County of	‡A2
Ramsgate	A2
Rayleigh	A
Reading	A
Redcar B.	A
Redditch U.D.	A
Redhill and Reigate	A
Ripon	A3
Rochdale	A
Rochester	A1
Rotherham	A
Rugby M.B.	A
Saffron Walden	A2
St. Albans	A
St. Helens	A
St. Neots	A2
Salisbury City	A2
Salisbury Plain	A2
Sawbridgeworth	A
Saxmundham	A2
Scarborough	A
Scunthorpe	A
Selby	A
Sevenoaks	A1
Sheerness	A2
Sheffield	A
Shipley	A
Shoeburyness	A
Shoreham	A
Shrewsbury M.B.	A
Sittingbourne	A2
Skegness U.D.	A1
Skipton U.D.	A
Sleaford U.D.	A2
Slough	A
Smethwick C.B.	†A
Snettisham	A2
Somerset, County of	‡A2
Southampton	A
Southend-on-Sea Dist.	A
Southport	A
South Shields C.B.	A
Spalding U.D.	A2
Stafford M.B.	A
Staines	A
Stamford M.B.	A1
Stantonwick	A
Stevenage	A
Stockport	A
Stockton R.D.	A
Stockton-on-Tees	A
Stoke-on-Trent C.B.	A
Stoke Orchard	A1
Stourbridge M.B.	A
Stourport U.D.	A
Stowmarket	A1
Stratford-on-Avon M.B.	A
Sunderland District	A
Sunningdale	A1
Sutton Coldfield M.B.	A
Swaffham	A2
Swanage	A1
Swansea	A
Swindon	A
Swinton U.D.	A
Tamworth M.B.	A
Tenterden	A2
Tewkesbury	A1
Thames Haven	A
Thetford	A2
Thorpe Bay	A
Thurrock U.D.C. Area	A
" North of, to Billericay	A
Tilbury	A
Todmorden	A
Tonbridge	A1
Torquay	A1
Totnes	A1
Trowbridge	A2
Tunbridge Wells	A1
Tynemouth C.B.	A
Uppingham (Salop)	A1
Uttoxeter U.D.	A2
Wakefield	A
Wallsend B.	A
Walsall C.B.	A
Walsden	A
Walton-on-Naze	A1
Ware	A
Warminster	A2
Warrington	A
Warwick M.B.	A
Wellington U.D.	A
Wells (Norfolk)	A2
Welwyn	A
Welwyn Gar. City	A
West Bromwich C.B.	A
Westbury	A2
Westcliff-on-Sea	A
Westerham	A1
Weston-super-Mare	A1
Weybridge	A
Weymouth	A1
Whitby U.D.	A1
Whitstable and District	A2
Wickford	A
Widnes	A
Wigan	A
Wigton	A2
Willington	A
Wilmslow	A
Wilts. County of	‡A2
Winchester	A1
Windermere	A2
Windsor and Eton	A
Wisbech	A2
Witham	A1
Woking (District)	A1
Wokingham	A2
Wolverhampton C.B.	A
Woodbridge	A2
Worcester C.B.	A
Workington	A
Worksop M.B.	A
Worthing	A2
Wrexham (incl. Cefn)	A
Wroughton	A1
Wylam	A
Wymondham	A2
York	A

*For Birkenhead, Liverpool and London the rates are:—Craftsmen, 3s. 10½d.; Labourers, 3s. 5d. In the case of London the rate beyond the 12-mile radius is:—Craftsmen, 3s. 10d.; Labourers, 3s. 4½d. † Plus 2d. per working day. ‡ This is the County rate and applies except where higher grades are stated.

NOTE.—Carpenters and Joiners providing own tools when employed in establishments operating under the Supplementary Rules for Woodworking Factories and Shops, receive 2d. per day; when employed on other building industry work, 4d. per day.

WOMEN'S RATES.—In all districts throughout the country the rate of wages for women engaged in craft processes is 2s. 8d. per hour. Women introduced to carry out work other than craft processes, 2s. 4d. per hour.

For Building Trade Wages in Scotland see page 966



Flooring at Ruxley Manor Primary School, Woolwich.

They chose WOOD floors

★ A good hardwood floor stands up to a lifetime of hard wear.

★ It is quiet, warm and comfortable underfoot.

★ It is a pleasure to look at.

★ It can be cheaply and easily maintained in perfect condition.

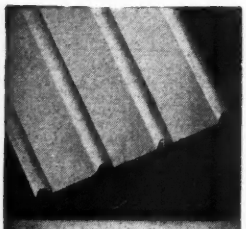
There's nothing like WOOD

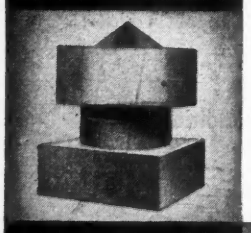
ISSUED BY THE TIMBER DEVELOPMENT ASSOCIATION LIMITED, 21 COLLEGE HILL, LONDON, E.C.4, AND BRANCHES THROUGHOUT THE COUNTRY IN CONJUNCTION WITH THE HARDWOOD FLOORING MANUFACTURERS' ASSOCIATION

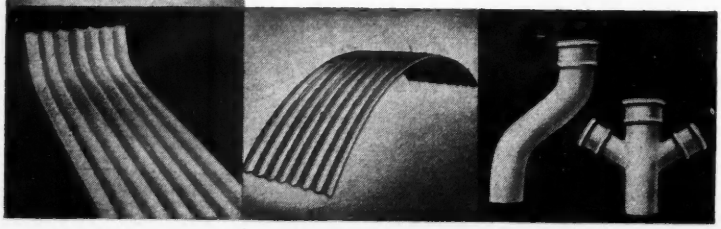
TD41

ATLAS

ASBESTOS CEMENT ROOFING MATERIALS







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London, S.W.1 *(Tel: ABBey 3081-2-3-4)*

Works at Meldreth, Greenhithe, Strood, Cambridge, Park Royal (London), Rye, Shorne and Wing.

NEWS IN BRIEF

BIM CHAIRMAN

The British Institute of Management have announced the appointment of Mr. Henry F. Spencer as chairman of the Institute in succession to Sir Hugh Beaver, who retired from that office on December 1.

RUBBER-LINED RESERVOIR

Two extensive tests carried out after six and nine months' service on the huge rubber bag which holds 12 million gallons of water in one of the two Mill Hill reservoirs at Easington, near Sunderland, Durham, have proved that the experiment of using rubber lining in service reservoirs is a success.

CEILING HEIGHTS

The Bermondsey Borough Council have announced their support to Battersea's protest to the Ministry of Housing, who are insisting that the ceiling height of rooms on the upper floors of dwellings shall be reduced from 8 ft. to 7 ft. 6 in. It has been stated that in the opinion of both councils, and of the Institute of Municipal Engineers, any reduction to a height of below 8 ft. is a retrograde step.

CENTENARY CELEBRATION

Messrs. Engert and Rolfe, of Barchester-street, E14, manufacturers of roofings and insulating materials, held a luncheon at the Palmerston Restaurant, in the City of London, recently, to celebrate the centenary of the founding of the firm. Mr. Basil Engert, the firm's chairman, was in the chair, and the principal guest was Lt.-Col. W. W. Dove, CBE, master of the Carpenters' Company. In a short address Mr. Engert dwelt on the importance of maintaining the quality of the goods they sold which had always been, and still was, his firm's policy. He thought that a medium-sized firm, as they were, had many advantages in this respect; they were all practically under one roof, and this made the task of efficient supervision relatively easy.

PLASTICS EXHIBITION

The third biennial British Plastics Exhibition will be held at Olympia, London, from June 1 to 11, 1955. There will be nearly 100 exhibitors, showing the latest materials, plant, mouldings and fabricated goods. The Plastics Convention will be held from June 2 to 9 and will cover the following subjects: Polymer structure and properties; expanded plastics; thermoplastics; extrusion; work study; injection moulding; patents; foundry resins; and glass reinforced plastics. The exhibition is being organised by the journal "British Plastics," Associated Iliffe Press, Dorset House, Stamford-street, SE1, with the co-operation of the British Plastics Federation.

LOCAL GOVERNMENT FINANCE

Details of the income and expenditure of local authorities in England and Wales during the financial year 1952-1953, presented to Parliament by the Minister of Housing and Local Government, have been published by the Stationery Office in the form of a pamphlet entitled "Local Government Financial Statistics, England and Wales, 1952-1953," price 9d. These show that the total income of local authorities' rate fund revenue accounts in 1952-1953 was £905m., an increase of £66m. over 1951-1952. Revenue expenditure on the rate fund services rose by £74m. to £916m.—the main increases being in education (£27m.), housing (£17m.), and highways (£4m.). Expenditure on capital account increased by £70m. to £512m., housing accounting for £62m. of the rise and education for £4m. Net loan debt rose from £2,553m. to £2,958., the largest increases being £288m. in housing debt and £50m. in education debt.

UCL CALENDAR

The 1954-55 Calendar of the University College, London, has now been published, and copies may be obtained from the Secretary, University College, London, Gower-street, WC1.

FURNITURE EXHIBITION

The British Furniture Exhibition, sponsored by the British Furniture Manufacturers' Federated Associations, is to be held at Earls Court, London, from February 14 to 24, 1955. More than 240,000 sq. ft. will be covered by the exhibits of British manufacturers of all kinds of furniture.

DATA ON ALUMINIUM

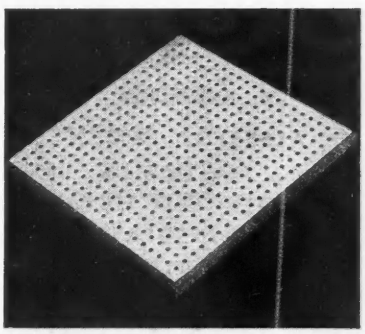
Details of their main series of technical books are included in a list of publications issued by the Aluminium Development Association. Another list has been published under separate cover containing details of films, film strips and wall charts available on loan. Copies from the Association at 33, Grosvenor-street, W1.

NORTHERN IRELAND HOSPITALS

Expenditure by the Northern Ireland Hospitals Authority on building work during 1953 amounted to about £850,000. Expenditure on several large projects was considerable, but is expected to be much greater in the next few years. Several important schemes were completed, and the year marked a major development through the beginning of the site works of the new Special Care Service colony at Muckamore, which is designed eventually to house 1,000 patients. Further particulars of these and other activities are contained in the Authority's annual report for 1953, now available from the Stationery Office.

ALUMINIUM RIVETING

Information bulletin No. 8 has been issued by the Aluminium Development Association, 33, Grosvenor-street, W1, and is entitled "The Riveting of Aluminium," price 2s.



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Acoustic and Insulation Division
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AUBTW MEMBERS' STRIKE

Extensive Stoppage Threatened

THE Amalgamated Union of Building Trade Workers announced early this week their intention to withdraw their members from contracts being carried out by George Wimpey and Co., Ltd., of Hammersmith. A spokesman of the union told a representative of *The Builder* that among the sites which would be affected by the end of this week were two large office projects in the City and Haymarket and other contracts at Bracknell, Stevenage, Slough, Nottingham, Mansfield, Gateshead and Stirling.

The AUBTW statement, which was issued by Mr. George H. Lowthian, MBE (general secretary), and Mr. Harry Weaver (national president) continued:—

"The union regret the necessity for striking the jobs concerned, but, owing to the attitude of the firm, have no alternative.

"The dispute originated at Crawley, where differences arose which were subsequently referred to the Emergency Disputes Committee of the National Joint Council for the Building Industry. The Disputes Committee, which met on November 26, gave a decision which, so far, the firm have refused to operate.

"The union draws attention to the fact that Wimpey and Co., Ltd., are probably the largest and most influential building and civil engineering contractors in Great Britain, and for such a firm to refuse to accept a ruling given by the highest conciliation authority in the industry is without precedent in the 30 years' history of the National Joint Council for the Building Industry.

"The firm's attitude is even more surprising having regard to the fact that the head of the firm—Sir Godfrey Mitchell—was a member of the recent court of inquiry dealing with the dockers' dispute.

"The union emphasises that if Wimpey and Co., Ltd., are successful in their defiance of the constitutional machinery for the settlement of disputes in the building industry there is no hope of continuing to persuade the workmen in the industry that such machinery is designed to protect both sides of the industry."

Wimpey's declined to make any statement on the matter.

It is understood that more than 1,000 members of the AUBTW were instructed to strike as from yesterday (December 9) or today.

OFFICIAL NOTIFICATION

Iron and Steel Scrap

THE Minister of Supply (Mr. Selwyn Lloyd), after consultation with the Iron and Steel Board, has made an Order consolidating the Iron and Steel Scrap (Nos. 1-4) Orders, 1952-54, which are accordingly revoked. The Order (SI 1954/1593, obtainable from HMSO), removes price control of all other iron and steel scrap to material sold to or bought by consumers.

The maximum prices of the better classes of iron and steel scrap have been increased by from 2s. 6d. to 30s. per ton.

PERSONAL COLUMN

Two new appointments have been announced by E. K. Cole, Ltd.: MR. A. J. BRUNKER, BSc (Eng), AMIEE, becomes chief engineer of the company; MR. W. M. YORK will now direct the company's export activities in addition to the publicity and heating divisions of the company.

MR. R. G. COLE, MSMA, has been appointed to the board of Carter & Co., Ltd., Poole, Dorset.

TRADE NEWS

RECESSED CEILING FITTING

A recessed ceiling fitting which can be installed in most forms of hollow ceiling is being made available by the Edison Swan Electric Co., Ltd., 155, Charing Cross-road, WC2. The fitting consists of an Ediswan industrial trough reflector for one or two fluorescent lamps fitted inside a steel frame surrounding the ceiling aperture. The frame is secured to the ceiling or, where a false ceiling is used, provision can be made for its suspension. A dustproof glass cover can be supplied, or alternative facings or louvres. A retractable lug device operated by a simple key enables the reflector to be released and lowered by one man to give access to the control gear and the back of the reflector.

LIGHTWEIGHT COMPRESSOR

A lightweight and cheaper model of the P42H Pescara-Muntz free-piston compressor has been produced, and like its standard counterpart, has an output of 105 cu. ft. FAD at a maximum operating pressure of 100 lb./sq. in. The differences between the two are in the chassis and canopy. Mackay Industrial Equipment, Ltd., Faggs-road, Feltham, Middx., are the distributors.

NEW WELDING APPLICATIONS

Experiments to prove a new application of Argonaut welding equipment manufactured by the British Oxygen Co. in use with mild steel have recently been carried out. It has been found to be satisfactory for welding certain qualities of carbon steels in all positions with the exception of vertical fillet and butt welds. The advantage given by "Argonaut" over metallic arc welding is understood to be higher deposition rate and consequently greater speed. A paper covering the findings during development is to be published shortly.

NEW FACTORY

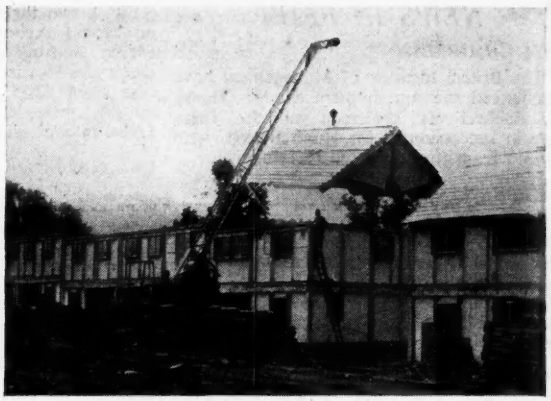
Hills (West Bromwich), Ltd., have acquired office and factory premises in Newcastle upon Tyne at Back Heaton Park-road, Newcastle 6 (Tel.: 59081/2). The factory will be operated by Hills' subsidiary, Bryan's Adamanta, Ltd., and produce "Gypsum" plaster wall panels and ceiling slabs.

NEW RADIATOR

A new radiator, known as the "Econarad," is being produced by Econa Modern Products, Ltd., and is suitable for installation in new or existing hot water systems. It is constructed entirely from copper to BSS 659 to comply with Water Department regulations and has already been given the approval of the Birmingham Department. The copper construction is understood to obviate any danger of corrosion from water and eliminate the need for a calorifier. The radiators incorporate the Econa "Spun-strong" method of manufacture, and are tested to 200 lb. psi (minimum) hydraulic pressure. They are normally supplied in a self-colour copper finish. Details from the manufacturers at Aqua Works, Highlands-road, Shirley, Birmingham.

WHOLE-HOUSE WARMING

The Radiation system of whole-house warming with ducted warm air has been installed in a new shoe store of Dolcis, Ltd., in Coney-street, York. The operating unit, run on gas with a thermostatic control, is in the basement, and ducts in the store emit and expel warmed air at any temperature desired. The architect in charge of the scheme was Mr. Ellis E. Somake, FRIBA. FRSA.



This one-piece roof structure is being positioned by a model L810 "Coles" crane on a Gloucester housing estate. The crane is owned by Hawkesley Constructions, of Hucclecote, Gloucester.

DIESEL HYDRAULIC LOADER

A new machine in the Muir-Hill range of dumpers and loaders, designed and manufactured by E. Boydell and Co., Ltd., Old Trafford, Manchester, was introduced at the Public Works Exhibition. The machine, a 1 cu. yd. diesel hydraulic loader, is the first full-size hydraulic loader in the Muir-Hill range. The 2-WL, as this machine is known, is designed to combine tremendous margins of strength and stability with high upward and forward reach and exceptional bucket capacity. The patent double 3-point pivoted suspension system, providing articulation between front and rear axles, is understood to offer great stability over rough ground and consequently higher safe working margins and loading rates. The standard general purpose bucket is of 4 ft. 7 in. width with a rated working load of 25 cwt. The discharge angle is adjustable, as is the digging angle of the bucket edge. A dozer blade can be attached or detached from the bucket, permitting light dozing work at any time. Other standard extras include a 25 cwt. hook attachment, and a 25 cwt. crane attachment. Double-acting hydraulic rams on both jib and bucket give complete control in either direction.

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"PUB" NAMED AFTER ROYAL YACHT

The first public-house in the country to be named after the new royal yacht "Britannia" was opened recently at Sabastopol-road, Edmonton, London. It is also the first house to be built by Taylor Walker and Co., Ltd., since the war. Surrounding the "Britannia" are multi-storey blocks of modern flats being built by the local council, and particularly the design of the new house, has been designed in keeping, and the inside decorations are simple but equally modern. Both bars are decorated in warm pastel shades, and the tables and serving counters are surfaced in red relief "Warerite" plastics. A cigarette-proof grade of "Warerite" has been utilised for the stubbing plates on the counter fronts. The architect was Mr. S. A. S. Yeo, ARIBA; and the building contractors were W. Loweth and Son, Ltd.

FLUORESCENT LIGHTING UNIT

Thorn Electrical Industries, Ltd., 105 Judd-street, WC1, have recently introduced a five foot fluorescent "Popular Pack" lighting unit. The pack contains a "batten" type lighting fitting, complete with all necessary control gear and an Atlas 80 watt "White" tube.

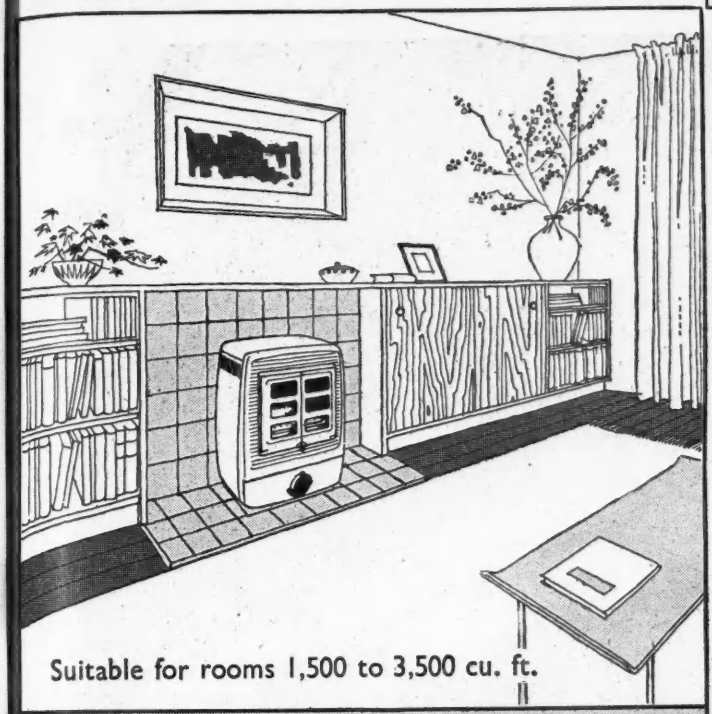
The new batten fitting will not be sold separately from the pack, and it is not intended that it should compete with the normal range of Atlas lighting fittings. It is, however, expected that the low price of the Atlas "Popular Pack" will bring fluorescent lighting within the reach of many to whom its advantages have previously been denied.

AIR-COOLED DIESEL RANGE

A new range of air-cooled diesel engines with powers up to 100 bhp has been introduced by J. and H. McLaren, Ltd., Leeds. Known as the Petter-McLaren PD range, these four-cycle engines run at 1,800 rpm, and are built in a range of two, three, four, six and eight cylinders. Direct fuel injection, directional ports and masked inlet valves are understood to give a low fuel consumption.

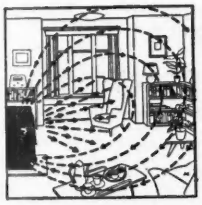
ALUMINIUM FOR ROOFING

The advantages of aluminium flat and coiled sheet for roofing purposes are outlined in a leaflet available from the Aluminium Union, Ltd., The Adelphi, WC2.

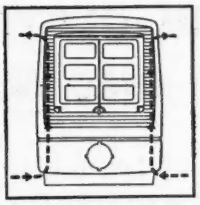


Suitable for rooms 1,500 to 3,500 cu. ft.

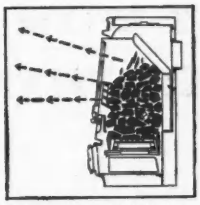
Supply and fit the RAYBURN Room Heater for radiant and convection heating



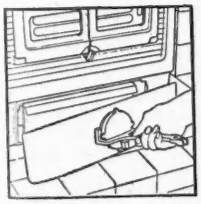
The well-known "warmth all round you" effect, plus a good view of the fire.



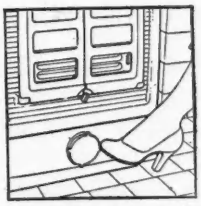
The Convection Flow: the inlet slots are concealed in the base, the outlet ones are at the sides.



Note the firebrick lining, and the removable front bars.



Simple shovel-type ash-pan. Notice the tool.



Spin-wheel air control, easily operated with the foot.

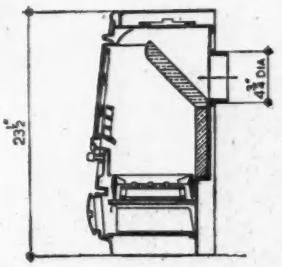
External riddling, with the doors closed — no fly-ash. Notice the tool again.

NOTES:

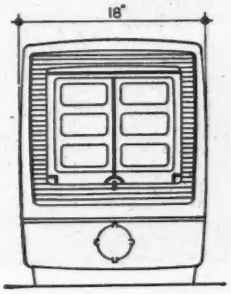
Beautifully designed, with real respect for 'commoditie firmnesse and delight'.

Excellent performance: can save up to 60% of fuel compared with the ordinary open fire.

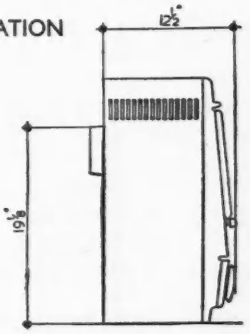
CROSS SECTION



FRONT ELEVATION



SIDE ELEVATION



Colours: Beige mottle, fawn mottle or black, Alisheen black, bramble, copper, bronze, or green.

Heating Capacity: The Rayburn Room Heater is suitable for rooms of 1,500 cu. ft. to 3,500 cu. ft. capacity.

The word Rayburn is a registered trade mark of Allied Ironfounders Ltd.

For further information about the Rayburn Room Heater write to the Housing Division of—

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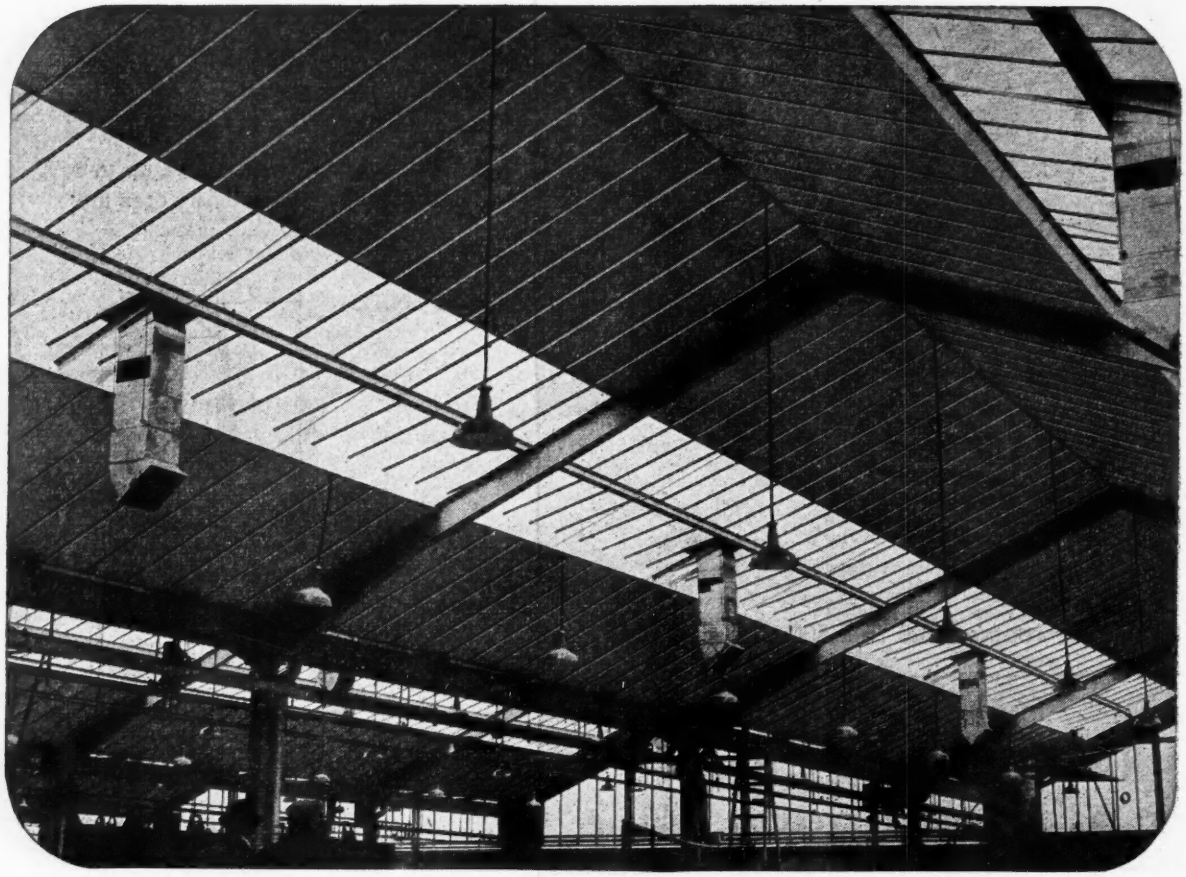

WHY SHOULD A FACTORY WITH INSULATION COST LESS THAN ONE WITHOUT?

The newly-erected B.S.A. factory at Dowlais, Merthyr Tydfil, gives the answer.

Uninsulated, the thermal transmittance of the corrugated sheet roof would have been 1.40: lined with ½" Lloyd Insulation Board it is 0.32—a clear saving of 1.08 B.Th.U/sq. ft./°F/hour.

In other words, the insulating efficiency of the roof is increased by 75%. This means that considerably less fuel is needed to keep the building warm and a much smaller boiler plant could be installed. It also means that a capital saving has been made which is nearly double the cost of insulation.

Calculated in terms of the balance sheet this shows:

A saving on building costs of nearly £9,000
SO INSULATION SAVES CAPITAL

A yearly saving on fuel costs of about £1,500
SO INSULATION PAYS REGULAR DIVIDENDS

Apart from the actual saving in costs, Lloyd Insulation has other advantages: lighting is better and more even: solar radiation is reduced in summer so less air circulation plant is needed: and with the Lloyd fixing systems an existing factory can be insulated *without interrupting production.*

For more information about **Lloyd Insulation** *have a word with*

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OVERSEAS BUILDING

[*From Our Own Correspondents*]

Aden.—Harbour and wharf development work is now being started which will enable ships of up to 2,500 tons capacity to berth alongside at Maala. The dredging will result in the reclamation of some 120 acres of land which will be available for business and official purposes. The whole scheme, which will take three years to complete, is estimated to cost £2.4m.

Greece.—The Greek Ministry of Communications has commissioned the French firm Omnium Lyonnaise to prepare a survey for the construction of the two main city tunnels of the extension of the Piræus/Athens electric railway to Kifissia. . . . The Ministry of Co-ordination state that an 800,000-kw. thermal electric plant is to be constructed. The design will be undertaken by the Public Power Corporation through its technical consulting firm. The German firm of Krupps has a share of the contracts.

India.—The Government of India has sanctioned a sum of £300,000 for the construction of 1,189 tenements under the Subsidised Industrial Housing Scheme. The Government of Mysore is to build 856 one-room single-storey tenements at Channapatna, Swana Sandra Extension, Mandya and Rajajinagar, and six two-room single-storey tenements at Channapatna. The Government of Bombay has also received loans for the Green Cross Co-operative Housing Soc., Ltd., Ahmedabad, and Sri Kamath Co-operative Housing Soc., Ltd., Ahmedabad, to build 57 and 20 one-room single-storey tenements respectively at Ahmedabad. The Jay Engineering Works, of Calcutta, and the Salem Magnesite Co., of Salem, South India, have received loans for building 200 and 50 tenements respectively.

A National Industrial Development Corpn. now exists in India. The head office is in Delhi. The corporation's aim is to promote industrial growth in the country, and will have details of all factory projects. . . . A scheme for the construction of a canal in the Gurgaon district will become effective as soon as funds are available. The canal, when constructed will irrigate an area of 350,000 acres. Over 400 miles of new roads will also be constructed in the areas served by the canal. The scheme will cost £2m. and will be completed in two phases. The first phase will include construction of 249 miles of road at a cost of about £1¼m. and will be completed by the end of 1956.

New Zealand.—The New Zealand Minister of Housing has issued a half-year's review of the housing position. He said that, at the present rate of building, New Zealand should have built between 18,000 and 19,000 houses by the end of the present financial year, March 31, 1955. For the first six months of this financial year the number of houses completed was 15 per cent. above last year's comparable figure, and building permits rose by nearly 30 per cent. The increased number of people who are building their own homes is shown by the 25 per cent. increase in loans granted by the State Advances Corporation, and by an even greater increase in the finance provided by private lending institutions.

Pakistan.—The Pakistan Industrial Development Corporation has under consideration new development schemes estimated to involve nearly £60m. They include the setting up of the pilot plant for steel production at a cost of about £10m.; the establishment of a newsprint factory in East Pakistan at a cost of £8m.; the setting up of a fertiliser factory at an estimated cost of about £5m.; the expansion of the jute industry; the establishment of new sugar mills; the extension of the Sui gas project to the Punjab; and the establishment of the pharmaceutical and dyestuff industries. These schemes cover building operations for the next ten years or so. . . . The Pakistani Industries Ministry has had talks with Italian experts regarding the setting up of a film industry. This will necessitate the building of studios and ancillary buildings.

South Africa.—The Randfontein Town Council have sanctioned building plans costing £116,878, of which £104,563 will be spent on a new high school at Homelake extension No. 1. . . . The Transvaal Indian Congress has asked the Johannesburg City Council to erect sufficient utility flats in Fordsburg to house 1,000 families. . . . A new South African Broadcasting Building is being built at Parktown, Transvaal.

Sweden.—The Copenhagen engineering firm of Christiani and Nielsen have been awarded a contract by the Gothenburg Harbour Authority in Sweden, to work out a project for a tunnel under the river Gota to connect the two parts of the town of Gothenburg. The tunnel is to have two twin car lanes, and two cycle paths. The project will be ready in about eighteen months. After the contract for building the tunnel is awarded it will take another four years to complete. The total costs are estimated at £3½m.

Switzerland.—It has been decided to set up a commission to produce a plan for the modernisation of the country's roads. The planning group will consist of experts representing the confederation of cantons and the transport associations, as well as planning specialists and private engineers.

Venezuela.—The Venezuelan Development Corporation is to build a number of warehouses to store rice. Plans are now being designed by native architects. . . . A number of countries are showing increasing interest in the new steel industry that is being planned in Venezuela. Colonel Llovera Paez, who has been made responsible for this scheme, has been touring Europe and included the UK in his travels. As this is one of the largest projects ever undertaken in Venezuela, and as no definite contracts have yet been finalised, it might be advantageous for British contractors to contact the Venezuelan Embassy in London where details are available.

Approximately £350,000 has been allocated for the establishment of a tourist industry in the Andes and Isla Margarita. A number of hotels are to be built in that area. A tunnel linking East Caracas with the coast as well as a cable railway up the Avila mountain is also in planning stages. Cost of both projects is said to be around £800,000. A glass factory is also to be erected on the Paraguana peninsula at a cost of £½m.

Over £13m. has been drawn from the Special Reserve Fund for building programmes. Included in these are the following: £1m. for hydro-electric works; £2m. for railways and ancillary buildings; £3m. for irrigation works; £3m. for slum clearance; £1¼. for the creation of a petro-chemicals industry; £1½m. for a dry dock; and about £2½m. for miscellaneous building work and renovations. In addition the Venezuelan Government has made a grant of £1m. to a company engaged in by-pass construction in Caracas. . . . It has now been clarified that the bridge over the Maracaibo Lake will cost over £12m. It will be from Punta de Leiva on the East Coast to La Ciega on the West Coast and will be 8 miles long.

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N. Wales Floorings
Sherwood Floors Ltd., Nottingham
South Western Flooring Co. Ltd., Totnes
Tegula Floors Ltd.
Walkers (Hove) Ltd.
Wecando (Lincoln)

INTERNATIONAL EXHIBITION

An international exhibition is to be held in Brussels from mid-April to mid-October, 1958.

The aim of the exhibition will be to present on a world-wide scale man's social, technical and cultural progress since the war.

It is understood that it will be the largest of its knd every held on the Continent, and will have an extensive industrial section. It will cover an area of more than 450 acres, and a total of 25 million visitors is expected. Invitations have been sent to 56 countries, and acceptances have been received from America, Canada, the Argentine, Norway, the Netherlands, etc. Further details may be obtained from Campbell-Johnson, Ltd., 35 Old Bond-street, W1. Tel.: Hyde Park 9026.

SIMPLIFIED ESTIMATING

A bound, indexed and standard bill-sized volume of 52 pages, price 5s., comprising the "Tabilac" simplified system of estimating, has been published by the Contractor's Record, Ltd., Lennox House, Norfolk-street, Strand, WC2, as a time-saver and "aide-memoire" in taking-off. Descriptive items follow one another in logical order, with appropriate spaces for measurements, and the work of taking-off may be interrupted and resumed after an interval without loss of continuity.

THE SCOTTISH BUILDER

Cumbernauld New Town

PROPOSALS designed to force the issue at a higher level in the deadlock between Glasgow Corporation and the Secretary of State for Scotland over the financial conditions attached to the building of the new town at Cumbernauld, were agreed upon recently at a meeting in Glasgow City Chambers of the executives of the Labour Groups concerned. The nature of the action was not disclosed, but it was indicated after the private meeting that there was absolute unanimity of support for the Corporation's attitude, and that the matter should now be treated with the utmost urgency.

Princes-street Planning

EDINBURGH CORPORATION are to meet the Earl of Home, Minister of State, Scottish Office, to discuss the future development of Princes-street. The meeting was mentioned on December 2 by the Lord Provost, Mr. John G. Banks, when he submitted to the town council the progress report of the planning committee.

In October the planning committee decided to seek "informed advice from sources commanding the highest respect and public confidence" on the formulation of principles which would guide future Princes-street development, and at the same time it was agreed to discuss the problem with the Secretary of State in view of his statutory planning responsibility.

Scotland's Housing in October

THE number of new houses completed in Scotland in October was 2,978, bringing the total of completions for 1954 up to 31,857. By the same date last year the number of completions was 31,967; in 1952 the number was 24,648. Altogether 254,903 new homes (222,727 permanent and 32,176 temporary) have now been built in Scotland under the postwar housing programme.

These figures are given in the Monthly Housing Return issued by the Department of Health for Scotland and the Ministry of Housing and Local Government, and published recently by HM Stationery Office, price 2d.

Fife Plan Approved

THE Secretary of State recently approved, subject to minor modifications, the development plan for the Levenmouth area of the County of Fife.

The plan sets out the county council's proposals for the development of the area during the next 20 years, and is subject to amendment at five-yearly intervals, or more frequently if necessary. It defines areas for housing, schools, open space and industrial development, and provides for a number of road improvements, notably in the burgh of Leven. It also provides for the comprehensive redevelopment of portions of Leven, Methilhill, and Kennoway.

Training of Apprentices

MR. T. M. BANKS, organiser of Further Education in Glasgow, said at a conference of the Scottish Association for Building Education at Glasgow on December 4, that Scotland had fallen miserably behind the South in the matter of adequate accommodation for the training of apprentices.

Education authorities were obliged to provide the best possible accommodation and equipment both for practical and technological subjects. Generally speaking, they had not done so, and the accommodation for craft apprentices in the building industry was vastly inferior to that for engineering apprentices.

More Schools to be Built

THE GOVERNMENT are to increase the amount of money available for educational building in Scotland, and proposals for expanding the present building programme are contained in a circular issued recently by the Secretary of State to education authorities. The proposals include a speed-up in the provision of new schools in new housing areas, the replacement and improvement of unsatisfactory schools, and the establishment of local technical colleges in all parts of Scotland.

Improvement Grants

AYR COUNTY COUNCIL'S recent decision not to give improvement grants to house owners under the Housing (Scotland) Act, 1950, led to numerous representations being made to the Secretary of State, who has asked the Council to send representatives to meet his Under Secretary, Commander T. D. Galbraith.

Despite this request, which is being considered by the Health Committee, the Council has decided to adhere to its decision. A letter from the Department of Health, making the request, said that while the giving of grants was a matter for the Council to decide, Parliament had taken the view that these grants should be generally available to owners willing to make improvements in accordance with specified requirements.

Dunkeld Little Houses

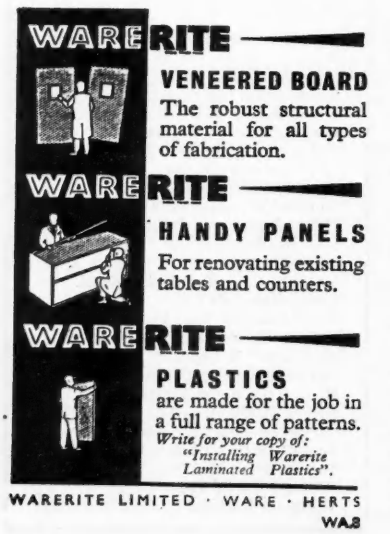
AN APPEAL for donations towards the restoration of the little houses of Dunkeld has been launched by the National Trust for Scotland.

Much of the rehabilitation work to be carried out in Dunkeld, the trust states, will not qualify for government grants under the Housing Act, and the appeal is made to help to carry the restoration plans through.

Good Design

THE importance of giving encouragement and opportunities to young artists and designers is emphasised in "The Value of Good Design," the report of the Scottish Design Congress, published recently by the Scottish Committee of the Council of Industrial Design.

A complete section of the report is devoted to the important part played in the encouragement of good design by public bodies who spend nearly £500m. every year on new buildings and works requiring development.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For renovating existing tables and counters.
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PLASTICS
are made for the job in a full range of patterns.
Write for your copy of: "Installing Warerite Laminated Plastics".
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SCOTTISH BUILDING TRADE WAGES

FOLLOWING are rates of wages authorised by the Scottish National Joint Council as from May 24, 1954. They apply to the whole of Scotland, including the islands of Orkney, Shetland, etc.

Grade A: Craftsmen, 3s. 9d.; Labourers, 3s. 3½d.

For apprentices, the rates are:

Year.	Percentage of Craftsman's rate.	For week of 44 hours.
		s. d.
1st	25	41 3
2nd	33½	55 0
3rd	50	82 6
4th	66⅔	110 0
5th	75	123 9

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Power Station Extension

AN EXTENSION, which has cost more than £2m., to Glasgow Corporation Transport Department's power station at Pinkston was opened on December 3 by Mr. Thomas Johnston, chairman of the North of Scotland Hydro-Electricity Board.

Glasgow Underground Railway

THE possibility of constructing a new underground transport system in Glasgow to serve new housing areas, was visualised in a discussion which the Municipal Transport Committee had recently with a representative of Sir William Halcrow and Partners, their consultants.

NEW BUILDINGS

Airdrie.—Corp. has plans in hand to be submitted to the Department of Health for Scotland for new Protestant school at Carlisle-rd., and for Catholic school at the Burnfoot district. The Council A is Harry Shaw, Master of Works Offices, Old Bank-bldgs., Graham-sq., Airdrie.

Caithness-shire.—Plans in hand for scheme of 200 houses at a Thurso site for which the architects and the civil engineers respectively are Sinclair, Macdonald & Son (F&A), Princes-st., Thurso, and Gilbert Thomson & Son, MInstCE, 164, Bath-st., Glasgow.

Carmile.—Plans in hand for comprehensive layout scheme for new housing area, for which the architect is Samuel MacColl (A), County-bldgs., Beckford-st., Hamilton West.

Clackmannanshire.—Plans have been approved by the Corporation of Alloa for scheme of 20 houses at Beachwood, Sauchie, and the Deer Park. The Council A is Peter A. Brown, Master of Works Offices, Alloa.

Dundee.—Plans prepared by their own architects for approved scheme of extensions, estimated at £60,000, to the Baltic Works of Hardie & Smith, Ltd., Dundee.

Edinburgh.—Plans prepared by their architects for factory and warehouse to be erected at an estimated cost of £100,000 at Beaverhill-rd. have been approved for W. & M. Duncan, Ltd., Regent Works, Edinburgh.

Glasgow.—Plans prepared and approved for commercial garage for Connell & Co., Ltd., West George-st., to be erected at Brand-st., Whitefield-rd. The civil engineers and architects are Linn and Cowan, 3, Clifton-pl., Charing Cross, Glasgow.

Glasgow.—Plans prepared and approved for Stirlings (Glasgow), Ltd., Miller-st., for alterations and additions at 59-61, Virginia-st. The architect is Baron Bercott (A), 118, Blythswood-st., Glasgow.

Glasgow.—Plans prepared and approved for Poole's Central Warehouse, Ltd., Old Colony House, South King-st., Manchester, for alterations and additions at 154 to 160, Sauchiehall-st. The architect is Baron Bercott (A), 118, Blythswood-st., Glasgow.

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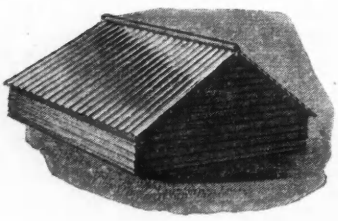

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Glasgow.—Plans prepared by their own architects have been approved for alterations and additions at 52-56, Woodlands-rd., for James N. Calt & Co., Ltd., 50, Woodlands-rd., Charing Cross, Glasgow.

Glasgow.—Plans prepared and approved for Offenbach, Ltd., 20, Great Portland-st., W1, for alterations and additions at Royal Exchange-sq. The architects are Shaw & Lloyd (F), 74, Russell-st., W1.

Glasgow.—Plans prepared and approved for alterations and additions for Francis V. Macnulty at Port Dundas-rd. The architect is James C. Caldwell, 22, Broomhill-cres., Partick, Glasgow.

Glasgow.—Plans prepared for the archdiocese of Glasgow for extension to the Church at Shettleston-rd., Parkhead, have been approved. The architects are Thomas Brown & Sons, 10, Dawleith-st., Glasgow.

Glasgow.—Plans prepared and approved for the Scottish Amicable Life Assurance Soc., Ltd., for additions and alterations at St. Vincent-st. The architect is John Wingate, 5, Oswald-st., Glasgow.

Glasgow.—Plans prepared and approved for the House of Frazer, Ltd., 12, Buchanan-st., for alterations and additions to their general warehouse, 200, Sauchiehall-st. The architects are Will B. Wright & Kirkwood (F&A), 9, Woodside-pl., Woodlands-rd., Charing Cross, Glasgow.

Glasgow.—Plans prepared by their own architects have been approved for extensions at the premises of Charles Connell & Co., Shipbuilders, Ltd., South-st., Scotstoun, Glasgow.

Glasgow.—Plans prepared for Beaverbrook Newspapers, Ltd., Fleet-st., EC4, for alterations and additions at 142-157, Albion-st. The architects are Sir Oliver Williams & Ptnrs., London.

Lanarkshire.—Plans prepared and approved for new residence at Garrick-drive, North Mount Vernon. The architect is Robert France, 7, Roundhill-drive, Eldersie, Renfrewshire.

Lanarkshire.—Plans have been prepared by the contractors' own architects for new residence at Arlington-rd., Symington; the same at Maxwell-drive and Thornbridge-rd., Garrowhill; and large building at Whirlow-drive and Whirlow-rd., Garrowhill. The general contractors are Henry Boots & Sons (Scotland), Ltd., Garrowhill Contracting Works, Lanarkshire.

Motherwell-Wishaw.—Plans prepared for 142 three- and four-apartment houses at the Pather housing site. The Council A is Charles Fyfe (A), Municipal-bldgs., The Cross, Motherwell-Wishaw.

New Cumnock.—CC is to erect a community centre for the Coal Industry Special Welfare Organisation. The Council A is Robert G. Lindsay (F), County-bldgs., Wellington-sq., The Sandgate, Ayr.

Stirlingshire.—Plans prepared and approved for the 1st dev. of the corp.'s Airfield housing site, consisting of 320 houses to be erected at an estimated cost of £436,000. The Council A is J. C. Wallace (F), Master of Works Offices, Municipal-bldgs., Grangemouth.

The Builder FUTURE CONSTRUCTION

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

DECEMBER 13.

*†**Preston.**—Sec. mod. sch., Longridge-rd., for Lancaster RC Diocesan Schools Commission. W. C. Mangan, chartered architect, 2, Ribblesdale-pl., Preston.

DECEMBER 14.

*†**Folkestone BC.**—Workshop, Wood-ave BE. Dep. £2 2s.

DECEMBER 15.

*†**Harpenden UDC.**—5 shops and flats over, Batford estate. F. A. Harris, Clerk. Deposit £1 1s. Tenders by January 10.

DECEMBER 17.

*†**West Sussex Standing Jt. Com.**—12 police houses. County A, Chichester.

DECEMBER 18.

*†**Essex CC.**—Adaptations to form hostel for elderly persons at Grosvenor House, Westcliff-on-Sea. H. Conolly (F), County A, Chelmsford.

*†**Essex CC.**—Premises, Waltham Abbey branch library H. Conolly (F), County A, Chelmsford.

*†**Hampshire CC.**—Sec. Gram. Sch. Gosport. County A, Winchester.

*Plymouth City C.—Work, etc., at Stoke Military Hosp.; Pembroke-st. prim. sch.; and Charlotte-st. prim. sch.

DECEMBER 20.

*Salisbury Corpn.—18 houses, Bemerton Heath estate. City E. Dep. £2 2s.

*†**Somerset CC.**—Day special school, Bridgwater. R. O. Harris (F), County A, Park-st., Taunton. Dep. £2 2s.

*†**Weston-super-Mare BC.**—40 houses, Coronation estate. R. G. Lickfold, TC.

DECEMBER 21.

*†**Lindsey CC.**—School, Rochdale-rd., Scunthorpe. Gollins, Melvin, Ward & Ptnrs., 15, Manchester-sq., London, W1.

*†**Oldbury BC.**—175 houses, Cakemore estate, Part 2. BS, Municipal Bank-chbrs. Dep. £3 3s. Tenders by January 28.

*†**Wilts CC.**—First instalment of special agreement school, Ainsbury. Clerk, Trowbridge. Dep. £2 2s. Tenders by January 26.

DECEMBER 22.

*Middleton BC.—30 bungalows on various sites. G. Syddall (L), Boro' A. Dep. £2 2s.

*Norfolk EC.—Clinic, Wells sec. mod. sch. and at Hellesdon infants' sch. F. Lincoln Ralph, Chief Ed. Officer, Stracey-rd., Norwich.

*†**Northumberland CC.**—Three pairs of police houses, etc., Cowpen, near Blyth. County A, Newcastle-upon-Tyne, 1. Dep. £2 2s.

*†**Northumberland CC.**—Fire station, Bellingham. County A, Newcastle-upon-Tyne, 1. Dep. £2 2s.

*†**Tottenham BC.**—Four bungalows and two houses. BE&S. Dep. £1 1s.

*†**Wilts CC.**—Pair of police houses, Ludgershall. Clerk, Trowbridge. Dep. £2 2s. Tenders by January 18.

DECEMBER 24.

*†**Essex CC.**—School, Doddinghurst; classrooms, Gt. Burstead school; classrooms, Langdon Hills school; and classrooms, Horndon-on-the-Hill school. H. Conolly (F), County A, Chelmsford.

*Havant and Waterloo UDC.—Seven garages, 15 Newbarn-rd., Bedhampton. E&S, Park-rd. North. Dep. £1 1s.

*Havant and Waterloo UDC.—28 houses, Scratchface-la., Bedhampton. E&S, Park-rd. North. Dep. £3 3s.

*†**West Sussex CC.**—Alterations, etc., Midhurst Grammar Sch. County A, Chichester.

DECEMBER 28.

*†**East Suffolk CC.**—Police house, Foxhall. E. J. Symcox (F), County Hall, Ipswich. Dep. £2 2s. Tenders by January 18.

DECEMBER 29.

*Biggleswade UDC.—43 houses, The Dells. T. Wilson, E&S

*Camelford RDC.—12 houses. R. R. Haylett, S. Dep £1 1s.

*†**Portsmouth City C.**—100 houses, Bedhampton Camp Site 2. City A, 1, Western-parade. Dep. £1.

DECEMBER 30.

*†**Blackburn CBC.**—School, Witton Park. BE. £2 2s.

DECEMBER 31.

Grimsby CBC.—(a) Foundations, superstructure, drainage, paths, etc.; (b) heating and hot water installations; (c) electrical installations for ESN school, Carnforth-cres. BE&A. Dep. £5 (each work).

*†**Hampshire CC.**—Gram. sch., Eastleigh. County A., Winchester.

*†**Llanfyllin BC.**—16 houses, Bronyaer. W. B. Bond, Q/S. Windsor House, 49, Calthorpe-rd., Edgbaston, Birmingham, 15. Dep. £2 2s.

*Shrewsbury BC.—15 bungalows, Springfield, Meole Brace and Meadows estates. BS.

JANUARY 3.

*Brighton CBC.—Adaptations to Varndean Girls' Sec Sch BE&S, 26-30, King's-rd. Dep. £2 2s.

*East Riding CC.—Alterations and extensions, Bridlington St. George's cty. sec. sch., and Kirk Ella CE sch. County A, Beverley. Dep. £2.

*Essex CC.—Smallholder's house, Little Warley Hall Farm near Brentwood. County Land Agent and Valuer, 69, Duke-st, Chelmsford.

*West Riding CC.—Conversion of Water-st. Chapel, Skipton, into office accommodation. County A, "Bishopgarth," Westfield-rd., Wakefield.

JANUARY 11.

*Caterham and Warlingham UDC.—Demolition of 42, Banstead-rd. E&S.

*Caterham and Warlingham UDC.—14 dwellings, Banstead-rd., Caterham. E&S. Dep. £2 2s.

JANUARY 12.

Bath City C.—Conversion of 12, Circus, into two flats and maisonettes. City Planning Officer and Architect, 7, North Parade-bldgs.

JANUARY 17.

*Lincoln (Kesteven) CC.—Building works, Ruskington C of E School. County A, Sleaford.

JANUARY 25.

*Ilford BC.—34 houses, Green-la. and St. Mary's-rd. BE. Dep. £2 2s.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

DECEMBER 24.

*Sunderland CBC.—Materials, etc., for 635 houses on various estates. Boro' A, Grange House, Stockton-rd. Dep. £2 2s.

DECEMBER 31.

*†**Durham CC.**—Heating installations, etc., five schools. G. R. Clayton (F), County A, Court-la., Durham.

Merioneth CC.—County S. (Materials.)

JANUARY 1.

*†**Feltham UDC.**—Installation of hot water systems to 451 dwellings. E&S. Dep. £2.

JANUARY 5.

Lambeth MBC.—BE. (Materials.)

JANUARY 8.

Dagenham BC.—BE&S. (Materials.)

JANUARY 12.

Lindsey CC.—County S. (Materials.)

NO DATE.

*Herts CC.—Approved list of contractors for building and maintenance works, heating and electrical works, fencing, etc. Clerk, Hertford.

Romford BC.—BE. (Materials.)

ROADS, SEWERAGE AND MATERIALS, ETC.

DECEMBER 31.

Beds CC.—About half-mile new road as diversion of Leighton Buzzard-Hemel Hempstead-rd., B486, at Billington.

North Devon WB.—Laying 1,000 yds. of 9-in., 3,300 yds. of 4-in., and 800 yds. of 3-in. spun-iron mains. Contract 40B. Chumleigh-Chawleigh. Rofe and Raffety, 3, Victoria-st., SW1. Dep. £2 2s.

JANUARY 7.

*Wrexham BC.—External site works, 48 dwellings, Aston-gr.; 96 dwellings, Rhosnessney, and also eight houses, Rhosnessney. BE&S. Dep. £3 3s. each.

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JANUARY 8.

Daventry BC.—7,890 sup. yds. of roads; 1,280 yds. of sewers for housing site. BS. Dep. £2 2s.

JANUARY 10.

Aldridge UDC.—Laying 550 lin. yds. of storm water sewers; 1,400 lin. yds. kerbing; 2,300 sq. yds. flag paving; 4,800 sq. yds. pitching and tarmac surfacing at Middlemore-la. E&S. Dep. £2 2s.

***Staffs Potteries WB.**—Pumping station, Peckforton. C. V. Brown, E & Manager and Clerk to Board, Albion-st., Hanley, Stoke-on-Trent. Dep. £5 5s.

JANUARY 18.

Cannock UDC.—Extensions to main sewage disposal works at Cannock. E&S. Dep. £2 2s.

JANUARY 31.

***Hatfield RDC.**—Roads and sewers for 150 dwellings, Redhill site. J. H. Parker (A), 82, Great North-rd. Dep. £2 2s.

GENERAL BUILDING WORK

(LONDON)

Ealing.—SCHOOL ENLARGEMENT.—The provision of four classrooms with sanitary, cloaks and washing accommodation at St. Gregory's RC primary school has been proposed by the school managers. The architect for the scheme is David Stokes, FRIBA, 32, Victoria-st., SW1.

Enfield.—GYMNASIUM.—Revised proposals have been made to CC for the erection of a new gymnasium and changing-rooms at the Enfield Boys' Grammar School at an estimated cost of £18,250. Plans have been prepared by Middlesex county architects' department.

Harrow.—BRANCH LIBRARY.—Proposals have been submitted to Middlesex EC for the erection of a branch library on the site known as "The Larches," Pinner-rd., Harrow. The estimated cost of the scheme is £12,230.

Staines.—SCHOOL ADDITIONS.—The erection of a section of a new teaching block and the conversion of existing accommodation into a biology laboratory at the Ashford cty. gram. sch., at estimated costs of £8,120 and £1,640 respectively, has been proposed by Middlesex EC, and plans have been prepared by county architect's department.

Wembley.—BOYS' SCHOOL.—CC have been recommended to approve revised proposals for the erection of the Alperton secondary modern boys' school on a site at Bowrons Farm, Ealing-rd., Alperton, at an estimated cost of £144,750. The scheme was prepared by Middlesex county architects' department.

Wembley.—BRANCH LIBRARY.—CC have approved proposals for the erection of a branch library at Wembley with a view to work being commenced during the financial year 1956-57.

Willesden.—LABORATORY.—Middlesex CC are recommended to approve plans prepared by county architect's department for the erection of an additional science laboratory at the Willesden Cty. Gram. Sch. at an estimated cost of £7,090.

Willesden.—SCHOOL EXTENSION.—Proposals have been presented to Middlesex CC for the construction of three additional classrooms, being further reinstatement of war-damaged accommodation at the Poundla. sec. mod. sch. at an estimated cost of £7,660. Plans were prepared by county architect's department.

Woolwich.—APPOINTMENT.—Hsg. Com. recommend the appointment of Messrs. R. T. Dadson, of 43, Doughtey-st., WC1, as quantity surveyors for the scheme for the conversion into flats of No. 37, Eltham-rd., Lee.

(PROVINCIAL)

Bacup.—TC seek approval for erection of further 54 houses on Tunstead Housing Estate, £80,000 est.

Belford.—RDC to build 20 flats in five blocks on site of agricultural hostel, est. cost £15,000. Plans by S.

Birmingham.—EC appointed Wood, Kendrick & Williams, 57, Colmore-row, as architects for proposed Bartley Green Woodgate Nursery Unit and Woodstock Hill Nursery Unit. QS, in both cases, Silk & Frazier, 35, Portland-rd., Edgbaston, Birmingham.

Boldon (Co. Durham).—Tenders to be obtained shortly for erection of new club premises, cost £15,000. Architects, W. Dixon & Son, 1, Collingwood-st., Newcastle-on-Tyne.

Boldon.—UDC to build 82 houses and 12 flats at West Boldon, and have instructed S, Council Offices, East Boldon, Durham, to prepare plans.

Bollington.—UDC to extend contract of Vessey, Ltd., to provide for erection of additional 20 houses at Bollington Cross site.

Brierley Hill.—TC instructed Cty. A. to prepare plans for dual-purpose swimming baths which can be converted into public hall.—Propose adaptation of old council offices at Hawbush House as community centre. Architect, J. R. Moore, Birmingham.

Brighton.—Special school proposed in Hollingbury-rd. by EC. Director of Education, Marlborough House, Old Steine, Brighton, 1.

Brighton.—Three-form entry sec. grammar (mixed) sch. at Stanmer proposed by EC, est. cost £170,102.

Brighton.—Erection of three-class RC junior sch. on the Hollingbury estate proposed by Trustees of St. Joseph's RC Church.

"THE BUILDER" PRICES

Steel Prices

Variations in prices of steel as and from December 6 are not recorded in the current Prices but will be adjusted in next week's issue.

Burton-on-Trent.—BC propose tech. high sch. at Branstone-rd. and Holy Trinity jun. mixed and inf. sch. in 1955/6 programme.

Bury.—TC to commence work early in 1955 on erection of bus stn. at Princess-st.—Propose erection of crematorium near junction Manchester-rd./St. Peter's-rd.—EC seek early approval for erection of Unsworth cty. prim. sch., Redvales sec. mod. sch. and sec. tech. sch. for girls in Radcliffe-rd. area.

Buxton.—S. to prepare plans for 12 lock-up shops at Victoria Park Housing Estate.

Chester.—TC received provisional allocation of 200 houses for erection in 1955. To sell sites at Linenhall-st. to MoW and Merseyside and North Wales Elec. Brd. for erection of new offices.

Chesterfield.—TC received approval for erection of fire stn. at Sheffield-rd..

Cockermouth.—RDC approved plans for pithead baths at Great Clifton.

Darlington.—Paton & Baldwins, Ltd., to erect fitters' shop at factory in McMullen-rd.

Dudley.—TC received Min. approval for erection of further 170 dwellings in 1955 programme.

Easington.—RDC approved plans for 16 houses at Shotton Colliery, for W. Wigham, builder.—RDC seek loan sanction £74,424 for erection of 28 houses at Wingate and 16 at Hutton Henry. R. E. Lumsden, S.—NCB propose additions to colliery offices at Wheatley Hill Colliery.

Easington.—MH&LG approved RDC's estimates for construction of 10 houses at Haswell, at £13,667; and 26 houses at Wheatley Hill, cost £37,331. Council has own direct labour organisation.—Council also to start work on erection of 23 houses for disabled people. S, R. R. Lumsden.

Eston (Yorks).—Balderson & Lee, builders, Southter., South Bank, to erect eight houses in Keswick-rd., Normanby.—John Smith's Tadcaster Brewery, Ltd., Tadcaster, seek £13,975 building licence for completion of "Magnet Hotel." Birchington-ave., Grangetown.

Gateshead.—Corp. TP Com. to reconsider new proposals by Hindmarsh, Heppell & Bourn, estate agents, Newcastle-on-Tyne, for provision of covered market in Sunderland-rd. area.

Heywood.—RC Auth. propose erection of sch. at Heywood New-rd.

Hexham.—F. W. Woolworth & Co., Ltd., London, to convert premises in Fore-st. and St. Mary's Chare into shop premises, storerooms and canteen. Firm have own architects' and building departments.

Houghton-le-Spring.—UDC considering scheme to modernise 2,057 houses at est. cost £55 a house.—Approval received for building of 50 houses at Shiney-row, and Council propose to build additional 60 houses on same site.

Huddersfield.—TC received approval for erection of fire stn. near Manchester-st. bus stn.

Ilkeston.—BC received Min. approval for erection of 120 houses in 1955 programme.—To negotiate with F. Sisson & Sons, Ltd., 32, Cromford-rd., Langley Mill, and E. & S. Halford, Ltd., Park-rd., Ilkeston, for erection of further 55 houses.

Leigh.—TC approved plans for erection of Miners' Welfare Centre at Twist-la.

Manchester.—TC approved erection of 36 houses, nine cottage flats and 10 aged persons' dwellings at Victoria-ave. and Heaton Park-rd., Higher Blackley.—Platt Court Buildings, Ltd., propose erection of 78 residential flats and 58 garages at corner Wilmslow-rd./Norman-rd., Rusholme. Architect, A. R. Johnson, 11, Peter-st., Manchester.

Middlesbrough.—Newcastle Hospital Brd., "Dunira," Osborne-rd., Newcastle-on-Tyne, to establish ear, nose and throat outpatients' dept. at North Riding Infirmary, Newport-rd. Board's Chief A, P. H. Knighton, MBE, ARIBA.

Middlesbrough.—Plans for new premises in grounds of Toft House, for Middlesbrough Little Theatre approved by TP Com. Premises will cost £30,000. Architects, Elder & De Pierro, 80, Wimpole-st., W1.

Middlesbrough.—Hsg. Com. approved proposals for clearing old property in St. Hilda's Ward and rebuilding flats, maisonettes and houses. 89 houses and flats to be erected as first step. It is proposed to obtain tenders for execution under one contract of all demolition work, construction of roadways and erection of new buildings in first two areas to be dealt with. BE, J. A. Kenyon.

Middlesbrough.—TC to begin site preparation work about next May on second stage of Pallister Park housing estate, and house-building will commence following January. Scheme provides for 694 houses, 24 three-storey flats and 20 old people's bungalows. BE, J. A. Kenyon, Municipal-bldgs.

Morecambe and Heysham.—BC received allocation of 101 houses for erection in 1955.

Newcastle-on-Tyne.—EC negotiating for site for new clinic to replace Atkinson-rd. Clinic.

Newcastle-on-Tyne.—Plans prepared by CWS Architects' Dept., 90, Westmorland-rd., Newcastle, for alterations for proposed offices at 88-94, Westmorland-rd.—J. Moffitt, Cheviot View, Ponteland, architect for showroom, workshop and 10 lock-up garages in West-rd., for J. Hogg.—Kenton Motor Co. to erect garage, paintshop and offices and eight lock-up garages in Ponteland-rd. Architect, A. S. Waring, 36, Jesmond-rd., Newcastle.—Marshall & Tweedy, 36, Blackett-st., Newcastle, prepared revised plans for proposed hotel in Redhall-dr., for James Deuchar, Ltd., Eldon-sq., Newcastle.

Newcastle-on-Tyne.—EC to build additional classrooms to North View prim. sch. Architects, Newcombe & Newcombe, Eldon-sq.

Newcastle-on-Tyne.—Cairns & Byles, 8, Osborne-rd., appointed heating and lighting consultants by EC, for proposed Firfield sec. boys' sch. Architects, Gray & Partners, Camden-st., North Shields.

Newport Pagnell.—RDC propose eight houses at Bow Brickhill, eight at Castlethorpe and four at Filgrave.

North Riding.—CC asked by EC to approve proposals for new schools at South Bank (£57,200), and Cleveland (£37,650), and proposed Cleveland tech. col. (£137,650). Also proposed to spend £12,000 on provision of school meal kitchens.—Land for proposed schools to be purchased at Skelton, RAF Leeming, Kirkleatham-la., Redcar, Colburn, and Brotton.—Next year's building programme will include nurses' and midwives' houses at Hutton Rudby, and Northallerton; ambulance stations at Haxby, Guisborough and Whitby.—County's Children Com. considering sites at Redcar, Saltburn and Richmond for proposed family-type children's homes. Cty. A, H. J. Knowles, County Hall, Northallerton .

Penistone.—RDC approved erection of 10 houses at Manor Park, Silkstone, and 14 at Fir Tree Estate, Thurgoland.

Prudhoe (Northumberland).—More than 500 houses to be demolished as slums by UDC during next few years and new houses will be built to rehouse displaced tenants. Council's A, J. M. Angus, 21, Lovaine-pl., Newcastle-on-Tyne.

Rainford.—Lancs CC propose erection of library, £10,676 est.—Approved erection of additional accomodation at Rainford sec. mod. sch. G. Noel Hill, Cty. A, Preston.

Rochdale.—Manchester Reg. Hospital Brd. approved opthalmic outpatients' dept. at Birch Hill Hospital.—Higsons Brewery, Ltd., propose alterations and additions to Wellington Hotel, Drake-st., £30,000 est. Architect, Cyril A. Boothroyd, Old Market Chbrs., Yorkshire-st., Rochdale.

Rugby.—BC approved plans for erection of new municipal buildings, comprising Benn Memorial Hall, council chamber, committee rooms and offices, at est. cost £170,500. MH&LG approval sought. Architect for scheme, Ernest Prestwich, FRIBA, Bradshawgate-chbrs., Leigh, Lancs.

Saltburn (Yorks).—UDC offering for sale site on Marske housing estate, for erection of licensed premises.

Scarborough.—Baker & Clark, York-pl., architects for proposed rebuilding of store in Roscoe-st., for A. W. Sinclair & Sons, Ltd.

Seaham.—UDC seek planning approval for erection of houses on 36 acres of land on Northlea estate. S, A. M. Smith, Cliff House, Seaham.

Seaton Valley (Northumberland).—UDC allocated 140 houses for erection during 1955. S, T. W. Burgess, Council Offices, Seaton Delaval.

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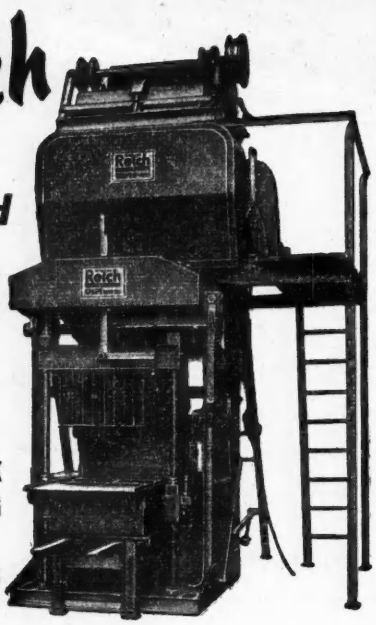

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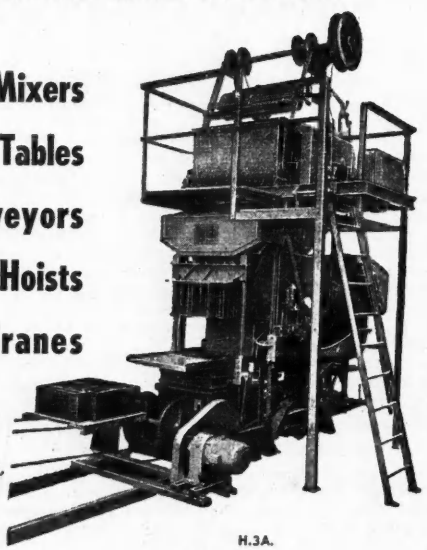

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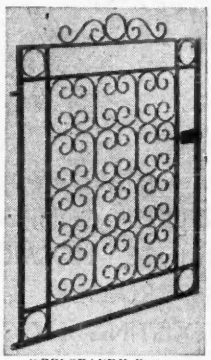

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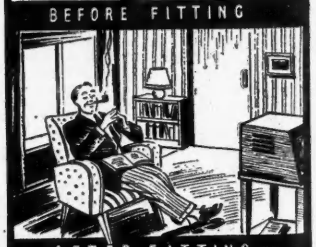

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Sedgley.—UDC to appoint A. Young, 188, High-st., Dudley, as architect for proposed Cinder-rd. Housing Estate.—To invite tenders from Wates, Ltd., London, and Selleck Nicholls & Co., Ltd., St. Austell, Cornwall, for erection of 20 flats at Summit-pl.

South East Cheshire.—MoE approved erection of a new girls' gram. sch. at either Congleton or Sandbach in 1955/6 programme.

Spennymoor.—UDC plan construction of 100 houses at Middlestone Moor, 30 at Byers Green and four at George-st., to be erected under next year's programme. Council's A, G. H. Gray & Partners, Camden-st., North Shields.

Stafford.—TC propose 10 aged persons' bungalows at Corporation-st.

Stockport.—BC propose erection of six-storey block of flats on York-st., Edgeley Slum Clearance Site, and have requested George Wimpey & Co., Ltd., London, to prepare detailed plans and estimates.

Stockton-on-Tees.—RDC to proceed with erection of 24 houses to complete Preston No. 4 housing site.

Stourbridge.—PC Council of St. Michael's Church propose church hall and parsonage and eventually new church at Norton Estate. Architects, Robinson & Kay, Stourbridge.

Stretford.—BC approved plans:—Two additional floors for offices at Trafford Park-rd., for Lancashire Dynamo & Crypto, Ltd.

Sunderland.—Six new schools to accommodate 1,120 children are planned for new council housing estates. Boro' A, H. C. Bishop.

Warwickshire.—CC propose new three-storey office block at Old Square, Warwick, £64,400 est.—Proposed old people's home at Field View Estate, Bedworth; new ambulance depot at Nuneaton, £12,500 est.; permanent clinic at Hobs Moat Estate, Solihull, and permanent general purpose clinic at Castle Bromwich, £16,220 est.—EC received Min. approval for erection of following schs. in 1955/6 programme:—Castle Bromwich cty. inf., £57,800 est.; Gaydon (Airfield) cty. jun. and inf., £35,300 est.; Solihull Streetsbrook cty. inf., £40,000 est.; Solihull Valley cty. inf., £40,000 est.; Sutton Coldfield Walmley cty. inf., £40,000 est.; Whitnash cty. jun., £51,400 est.; Exhall Ash Green cty. sec. (extensions), £105,000 est.; Hartshill cty. sec., £187,000 est.; Kingsbury cty. sec., £90,000 est.; adaptations at Rugby St. Marie's RC sec., £60,000 est.; Solihull Sharmans Cross cty. sec., £135,000 est.; Southam cty. sec., £103,000 est.; and Stratford cty. high, £112,000 est.

West Hartlepool.—TC approved layout plans by Boro' A, A. G. Sinclair, for sections 5C and 6A of Owton Manor Housing Estate.

West Hartlepool.—R. H. Duns, Lambton House, Lambton-rd., Newcastle-on-Tyne, appointed QS by TC in connection with proposed erection of shops in Wynyard-rd., and Catcote-rd.

West Hartlepool.—Plans approved for rebuilding of St. Joseph's RC sch. Architect, T. A. Crawford, 80, Borough-rd., Middlesbrough.

TENDERS

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government Departments.*

Abingdon.—54 three-storey Cornish unit flats: *Selleck Nicholls & Co., Ltd., £73,134.

Ayrshire.—South West of Scotland Elec. Brd's Transport Depot and Engineering Workshops at Lower Glencairn-st., Kilmarnock. Architect, Alexander Dunlop (F), 110, King-st., Kilmarnock: *Palmer Bros. & Co., Ltd., Pathfoot Works, Kilwinning.

Birkenhead.—Self-service shop at Argyle-st., for Birkenhead & District Co-op. Soc., Ltd.: *Direct Labour.

Blackpool.—Departmental store extensions at Adelaide-st., for R. H. O. Hills, Ltd.: *Chadwick Bros. (Layton), Ltd., Little Havton, Blackpool.

Bristol.—Prestcore piling and associated foundations, for Chief Engineer, Port of Bristol Auth.: *Davies, Middleton & Davies, Ltd., Phœnix Works, Caerphilly-rd., Cardiff.

Buxton.—Houses at Victoria Park No. 3 site, for TC: *H. Jones (Heaton Chapel), Ltd. (4); *F. Allcock & Sons, Ltd. (4). (Revised tenders.)

Cardiff.—Alterations to grass digestor house and boiler house buildings at Ely paper mills, for Surveyors' Dept., Wiggins Teape, Ltd., London: *Davies, Middleton & Davies, Ltd., Phœnix Works, Caerphilly-rd., Cardiff.

Cardiff.—Prestcore piling to foundations of new boiler house at Hamadryad Hospital. Consulting Engineers, Wallace Evans & Partners. Architect, Wm. Hughes, FRIBA: *Davies, Middleton & Davies, Ltd., Phœnix Works, Caerphilly-rd., Cardiff.

Chadderton.—12 flats at junction of Mough-la. and St. George's-sq., for UDC: *James Hartley & Sons, Ltd., Chadderton.

Chester.—Highfield Inf. sch. at Hillside-rd., Southway and Blacon Point-rd., for EC: *Shones (Buckley), Ltd., Church-rd., Buckley, Cheshire, £34,435.

Chesterfield.—18 flats at Pevensey estate, for TC: *W. Redmile & Sons, Ltd., Sheffield, £20,728.

Edinburgh.—Five blocks of 11 houses at Baillie-ter.: *James Miller & Partners, Ltd., 2, Woodside-ter., Woodlands-rd., Charing Cross, Glasgow.

Eston.—40 houses at Redcar-rd. East estate, for UDC. S, N. C. Harrison, Normanby-rd., South Bank: *Direct Labour for 32 houses; *R. C. Ayres, Benson-st., Middlesbrough, eight houses.

Gateshead.—Reinstatement work at factory formerly occupied by the Heaton Foundry Co., and to be taken over by Einco, Ltd.: *Stephen Easten, Ltd., Westgate Grange, Newcastle-on-Tyne.

Gateshead.—Reinstatement work at factory on Team Valley trading estate, for the Dunlop Rubber Co., Ltd.: *Stephen Easten, Ltd., Westgate Grange, Newcastle-on-Tyne.

Gateshead.—Factory additions for James White (Shopfitters), Ltd., Team Valley trading estate. Architect, E. M. Lawson, Barras-bldgs., Barras Bridge, Newcastle-on-Tyne: *D. & J. Ranken, Ltd., Stockton-rd., Sunderland.

Halesowen.—12 aged persons dwellings at Fatherless Barn estate, for TC: *W. Basterfield & Co., Ltd., Stone-la., Kinver, Stourbridge, £13,084.

Hartlepool.—Alterations to X-ray dept. at Hartlepool Hosp., for Newcastle Hosp. Bd., "Dunira," Osborne-rd., Newcastle-on-Tyne: *John Proud, Ltd., York-rd., West Hartlepool.

Hemel Hempstead.—Nine houses, five bungalows, two flats, four lock-up shops and four garages at Hobbs Hill-rd., for BC. Engineer, A. H. Turner, AMICE. Quantities by C. E. Ball & Ptnrs.: *Arthur Phillips, Ltd., 197, High-st., Waltham Cross, Herts, £30,170.

Hendon.—Enlargement of Hendon Tech. Col.: *Charles R. Price, £57,957.

Kensington.—19 flats at Finborough-rd. and Redcliffe-sq.; *R. Mansell, Ltd., £33,824.

Lanarkshire.—24 houses at the Newfield hsg. site, Stonehouse. Samuel MacColl (A), Hsg. A, County-bldgs., Beckford-st., Hamilton West. Excavation, brick, and building works: *T. C. Anderson & Co., Ltd., Hamilton, £14,011; joinery, carpentry, ironmongery and glazing: *Thomas Hamilton & Sons, Ltd., Stonehouse, £10,333; roof tiling and roughcasting: *Archibald Rowatt & Son, Ltd., Hamilton, £1,514; plumbing, sanitary engineering, gasfitting: *Alexander W. Thomson & Co., Ltd., Cadzow Sanitary Engineering Works, Bellshill, £4,249; electrical fittings installation: *William Y. Macadam & Co., Ltd., 32, Campbell-st., Hamilton, £990; plaster, lathing, cement: *Archibald Rowatt & Sons, Ltd., Hamilton; painting, decorating: *Thomas Moran, Ltd., Strathavon, £779.

Leeds.—448 flats and six shops at Saxton-gdns. area, Marsh-la. redevelopment area, for TC: *G. Calverley & Sons (Contractors), Ltd., Evington Valley-rd., Leicester, £943,268.

Lichfield.—Wheel-la. cty. prim. sch., for Staffs CC: *J. & F. Wootton, Ltd., Pinfold, Bloxwich, Walsall, £40,860.

Liverpool.—Methodist Church Hall and Sunday-sch. at Kirkby: *John McGeogh & Sons, Ltd., Arbour-la., Kirkby, near Liverpool.

¶London (Admiralty).—Particulars of contracts over £1,000 in value:—

Cornwall: Resheeting hangars: Baileys (Bristol), Ltd., 103 and 65, North-rd., Bristol; painting work, T. H. Kenyon & Sons, Ltd., Topsham-rd., Topsham, Exeter. *Hants*: Road works, Southern Counties Construction Co., Ltd., 204, London-rd., Waterlooville, Portsmouth; resheeting hangars, Carter Horseley (Engineers), Ltd., Merebank-la. Waddon, Surrey; building work, John Hunt, Ltd., South Wharf, Cleveland-rd., Gosport; steelwork, T. C. Jones & Co., Ltd., 91-95, Wood-la., W12. *Glamorgan*: Building work, John Morgan (Builder), Ltd., 14, Catherine-rd., Cardiff. *Fife*: Building work, Colin Morris & Son, 7, Preston-cres., Inverkeithing. *Durham*: Steelwork, The South Durham Steel & Iron Co., Ltd., Malleable Works, Stockton-on-Tees. *Devon*: Building work, F. J. Stanbury, Ltd., Alexandra Works, Plymouth.

¶London (Air Ministry).—Contracts to the value of £500 or over for the week ended December 4:—

Building work: Drabble Construction, Ltd., 44, Aylesbury-st., Bletchley, Bucks; Wm. Anelay, Ltd., 32, Coney-st., York; Wm. Thornton & Sons, Ltd., 38, Wellington-rd., Liverpool; Farrans, Ltd., 78, Mount-st., W1; Y. J. Lovell & Son, Ltd., The Druids, Bishopric, Horsham, Sussex. *Heating services:* Richard Crittall & Co., Ltd., 151, Great Portland-st., W1. *Electrical wiring services:* Lowestoft Electrical Co., Ltd., 81, Hills-rd., Cambridge.

¶London (MOW).—Contracts placed by Ministry of Works for week ended November 27, 1954:—

London: Flaxman TE (omitted from return for WE 20.11.54), erection of lift shaft, R. Dixon & Sons, Britannia Works, Park-walk, SW10; 1, 2 and 3 Sanctuary-buildings, SW1, alterations and decorations, Marshall Andrew & Co., Ltd., 31, Queen Anne's Gate, SW1; Ebury Bridge House, SW1, internal decorations, Sykes & Son, Ltd., 8, Essex-st., WC2; Audit House, Victoria Embankment, EC4, internal painting, J. W. Green (Painters), Ltd., 171, Graham-rd. SW19. *Aberdeenshire*: Coastguard Station, Belgelvie, Proposed LOHLSA and Bachelors' Quarters, James Aitken, 829, Gt. Northern-rd., Aberdeen. *Cumberland*: Millom, Home Office Civil Defence Training Centre, W. Townson & Son, Ltd., Higher Swan-lane, Bolton, Lancs. *Glamorganshire*: HPO (Westgate-street, Cardiff, alterations and repairs on 2nd floor, Graham Bros. (Builders), Ltd., Allensbank-rd., Cardiff. *Gloucestershire*: GCHQ Benhall Farm, Cheltenham, alterations, additions and decorations to canteen block, M. J. Partridge, Birdlip, Gloucester; RAF Records, Barnwood, refelting roofs to B block and canteen, Highways Construction Co., Ltd., 80, Park-st., Bristol. *Lincolnshire*: MOL Wesley Chapel Hall, Clasketgate, Lincoln, erection of partitions, redecorations, repairs, etc., Wm. Wright & Son (Lincoln), Ltd., Park-st., Lincoln. *Middlesex*: Government Buildings, Bromyard-av., Acton, alterations to the ground, 2nd and 3rd floors, J. Garrett & Son, Ltd., Cathless-rd., Balham Hill, SW12. *Midlothian*: Ministry of Agriculture and Fisheries, Eskgrove, Lasswade (omitted from return for WE 20.11.54), erection of hut for swine fever vaccine unit, John Crow & Sons, 26, Ballantyne Road, Edinburgh, 6. *Monmouthshire*: MOH Hospital, Chepstow, adaptations and rendering, Noel T. James Ltd., Kelvedon-st., Works, Newport, Mon. *Northumberland*: MPNI, Benton Park-rd., Newcastle-upon-Tyne, refelting roofs, Macartney, Ltd., 13, Blackett-st., Newcastle-upon-Tyne. *Surrey*: Old Civic Restaurant, Kingston, adaptations to form offices, Baileys (Builders and Contractors), Ltd., 2, George-rd., New Malden, Surrey. *Worcestershire*: MPNI, Churchfield-rd., Bromsgrove, erection of offices, J. & A. Brazier, Ltd., Building Contractors, Bromsgrove, Worcs. *Yorkshire*: Post Office, Churchill-rd., Doncaster, erection of garage, P. P. Taylor (Doncaster), Ltd., 6, South Parade, Doncaster; Century House, South Parade, Leeds, internal decorations, Modern Decorations (Horsforth), Ltd., Stanhope Drive, Horsforth, Leeds.

¶London (War Dept.).—Works contracts placed by War Dept. for week ended November 27:—

Derbyshire: Painting & decorating, A. B. Marriott & Son, Derby. *Staffordshire*: Building work, E. Williams & Sons, Norton Canes. *Worcestershire*: Building work, Lewis & Watters Ltd., Lillington. *Warwickshire*: Building work, Espley & Co., Ltd., Evesham. *Lancashire*: Sportsground construction, Maxwell M. Hart (Glasgow), Ltd., Glasgow. *Merioneth*: Building work, R. A. Buckle, Ltd., Prestatyn. *Wiltshire*: Building work, Downing, Rudman & Bent, Ltd., Chippenham. *Hampshire*: Flooring, Vigers Bros., Ltd., London. *Norfolk*: Electrical installations, Eastern Electricity Board, Beccles. *Kent*: Underground electricity cables, etc., Crompton Parkinson, Ltd., Chelmsford.

Maidenhead.—Six houses at Pinkneys Green estate, BE&S: *Waymins, Ltd., Virginia Water, £9,219.

Manchester.—Maintenance depot at Newall-gr., for TC: *F. Marsland, Ltd., Stockport; elderly men's pavilion at Rippingham-rd. recreation ground, Withington, for TC: *G .W. Dawson & Co., Manchester. 18 aged persons' dwellings at Langley estate, 68 maisonettes and flats at Ridgway-st., Ancoats, and 108 maisonettes and flats at Palmerston-st., New Cross, for TC: *Direct Labour.

Newcastle-on-Tyne.—Alterations to Ward 2 at the Walkergate Hosp., for Newcastle Hosp. Bd.: *J. & W. Lowry, Corporation-st., Newcastle, £2,536.

Notts.—Nuthall Larkfields prim. sch., for CC: *J. W. Stamp & Co., Ltd., Nuthall-rd., Bobbersmill, Nottingham, £42,845.

Plymouth.—Erecting storage premises at South Milton-st., for the Michelin Tyre Co., Ltd. Architect, Alec F. French & Partners, Pearl Assurance House, Royal-parade, Plymouth. Surveyors, Gleeds (Plymouth), Phœnix-chbrs., Princess-sq., Plymouth: *A. M. Coles (Contractors), Ltd., Sutton-rd., Plymouth, £10,537.

Prudhoe (Northumberland).—Shops and flats for UDC. Architect, J. M. Angus, 21, Lovaine-pl., Newcastle-on-Tyne: *E. Jeffcock, Ltd., New Bridge-st., Newcastle-on-Tyne, £17,390.

St. Helens.—Extensions to estate canteen at Parr

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Industrial estate, for the North-Western Industrial Estates, Ltd.: *Clough & Gaskell, Ltd., Billinge-rd., Pemberton, nr. Wigan.

Salford.—72 dwellings for aged persons, Sandy-la., for Booths Charities, Ltd.: *Moston Brick & Building Co., Ltd., Kenyon-la., Collyhurst, Manchester. Architects, Halliday & Agate, 19, John Dalton-st., Manchester.

Sheffield.—Bradway ct. prim. sch., for EC: *Bailey & Martyn, Ltd., Sheffield, £113,298. Following for TC:—274 "Wates" houses at Stradbroke estate: *M. J. Gleeson (Contractors), Ltd., Sheffield, £396,283; 75 dwellings at Busk Meadow: *H. Dernie & Sons, Ltd., Sheffield, £106,551.

Sheffield.—Cty. prim. sch., Broadway, for City C. City A:—

Melling Bros., Ltd.	£147,000
Public Works Dept.	128,180
J. W. Sivil, Ltd.	123,106
*Bailey & Martyn, Ltd.	113,298

Startforth (Yorks).—Six houses at Bowes, for RDC: *W. G. Bussey, Ltd., Darlington, £8,988.

Stockton-on-Tees.—Congregational Church at Yarm-rd., £15,300. Architects, Richardson & Shaw, Skinnergate, Darlington: *R. Blackett & Son, Ltd., Darlington.

Stonehouse.—Third development of the Newfield housing site (24 houses). Samuel MacColl (A), architect, County-bldgs., Beckford-st., Hamilton West; excavation, brick, building: *J. C. Anderson, Ltd., The Contracting Works, Hamilton, £14,011; carpentry, joinery, ironmongery, glazing: *Thomas Hamilton & Sons, Ltd., Anglo Contracting Works, Strathavon, £10,333; rooftiling and roughcasting: *Archibald Rowan & Sons, Ltd., Blairbeth Contracting Works, Hamilton, £1,514; plumbing, sanitary engineering, gasfitting: *Alexander W. Thomson, Ltd., Bellshill, £4,349; plaster, lathing, cement: *Archibald Rowatt & Sons, Ltd., Blairbeth Contracting Works, Hamilton, £1,049; electricity fittings installation: *William Y. Macadam, Ltd., Electrical Engineering Works, Campbell-st., Hamilton, £990; painting, decorating: *Thomas Moran, Glazing Works, Strathavon, £779.

Sutton and Cheam.—20 flats at Stonecot Hill, for BC. N. H. Michell, BE&S. Quantities by Arthur J. Willis & Thompson:—

King's (B.D.J.), Ltd., Teddington	£41,469
Roll, H. H. & F., Ltd., Epsom	40,265
Woodcock Bros. (Wimbledon), Wimbledon	39,524
Howard, M. (Mitcham), Ltd., Mitcham	39,240
Field-Davis, Ltd., Barking	38,719
Snelling & Rayment, SW16	36,800
Orchard & Peer (London), Ltd., Wimbledon	36,730
Greenaway & Son, Ltd., SE22	36,607
Walker (Tooting), Ltd., Hackbridge	36,220
*Cartwright, Joseph, Ltd., 9, Streatham High-rd., SW16	35,983

(Subject to Ministry approval.)

West Hartlepool.—16 houses in Elmwood-rd.: *W. W. Brazell, Ltd., Raeburn-st., West Hartlepool.

Woolwich.—19 dwellings at Bostall Hill, Myrtledene-rd.: *Direct labour, £35,466.

York.—Erection of seven physical education rooms at St. John's College, York: *Wm. Birch & Sons, Ltd., Spen-la., York.

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